Faculty of Medicine University of Toronto

Dean's End-of-Term Report

1987

Preface and Acknowledgements

As I conclude my seven year term as Dean of Medicine I am most thankful to the academic and administrative staff of the Faculty and the teaching hospitals, to the alumni and, of course, to the students with whom I have interacted. All of them together constitute the University of Toronto medical family. They have made my task not only possible but also most rewarding.

This end-of-term report will be my way of saying 'goodbye' as Dean. It attempts to summarize our collective work over the past seven years, including both achievements and shortcomings. Inevitably, it cannot claim to be comprehensive given the size and complexity of this Faculty. However, I believe that it is a fair account of our progress during a particular challenging period of the Faculty's history.

The coordinator and editor of this report has been Sherril Gelmon, head of our Planning Directorate, to whom I am particularly grateful. Since she joined my office, Sherril Gelmon has contributed her high energy and skills in a most successful way. Many members of the Deanery — Deans, administrative directors and secretarial staff — participated and I thank them for their help, especially under the time pressures to which they have been subjected as one administration gives way to the next. In particular, Andrēa Toepell stepped into the breech at short notice and gave most generously of her time and energy. As usual, Liivi Currier and her capable staff at Instructional Media Services are responsible for the technical production of this report, and for the consistently high quality of their work I have nothing but admiration.

This Faculty, now generally regarded as the premier medical school in Canada, depends entirely upon the energy and dedication of its investigators, teachers and administrative staff who have identified themselves with the institution and who are intent on pursuing excellence in their work. This includes many clinical teachers who are not paid salaries by the University and who, in return for their generous investment of time and energy, receive token honoraria or, in many instances, only the satisfaction that they contribute meaningfully to a highly worthy enterprise.

The University administration has always taken pride in the accomplishments of this Faculty. In recent years they have also recognized that it is short-sighted to penalize us for being enterprising in mobilizing non-University funds (currently about 50% of our annual operating budget). I have appreciated the opportunity to work with Presidents J. Ham, D. Strangway and G. Connell, with Provosts D. Chant, D. Strangway, F. Iaccobucci and J. Foley and with Vice-Provosts E. Kingstone and C. Hollenberg. The last named in particular has been for me a constant source of stimulation, support and comradeship.

The Faculty of Medicine is fortunate in the quality and loyalty of its administrative staff, led by Jim Kraemer, and I am most grateful to him. With his division heads, and in the face of a daunting volume of work, he has supported the academic endeavours of the Faculty in splendid fashion. No administrator can function without loyal, dedicated secretarial support and I wish to acknowledge, with much gratitude, the help of Elizabeth Scott, Irene Kavanagh and the Faculty Secretary, Fran Morris. They have assisted me, guided me and protected me over the years.

The University of Toronto, and I personally, owe much to all of these individuals and to the department chairmen, division directors and hospital chiefs who make it possible for the teachers, academic clinicians and investigators to do their work.

The Faculty is fortunate in the high quality of the personal attributes of the next dean, my successor Dr. John H. Dirks. It is with confidence that I turn over leadership of this great medical school to a first class clinical scientist and intellectual leader. In the words of T.S. Eliot,

> *"Last year's words belong to last year's language, and next year's words await another voice."*

The recent past has been difficult but gratifying; the future is bright.

Frederick H. Lowy,
June 30, 1987

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TABLE OF CONTENTS

Page

PREFACE AND ACKNOWLEDGEMENTS i

1. INTRODUCTION 1

2. REVIEW OF THE PAST SEVEN YEARS 3
   - 2.1 EDUCATION 3
   - 2.2 RESEARCH 13
   - 2.3 FACULTY ORGANIZATION AND OPERATIONS 23
   - 2.4 RESOURCES 37

3. DIRECTIONS FOR THE FUTURE 45
   - 3.1 FACULTY LONG-RANGE PLANNING 45
   - 3.2 ACADEMIC PROGRAMS 45
   - 3.3 RESEARCH 45
   - 3.4 SPECIFIC PRIORITY ITEMS 45

4. CONCLUSIONS 49

SUPPLEMENTARY TABLES 50

APPENDIX 53

EXHIBIT 1

DECANAL TEAM 1980 - 1987

Dean	F.H. Lowy (1980 - 1987)
Associate Dean, Academic Affairs	W.H. Francombe (1976 - 1984); E.M. Sellers (1984 -)
Associate Dean, Postgraduate Affairs	R.H. Sheppard (1977 -)
Associate Dean, Research	K.J. Dorrington (1981 - 1982); B.J. Underdown (1982 - 1984); G.H. Anderson (1984 - 1987)
Associate Dean, Neuroscience Development	W.G. Tatton (1984 - 1987)
Associate Dean, Basic Sciences	K.J. Dorrington (1978 - 1981); D.W. Clarke (1981 - 1984); K.L. Moore (1984 -)
Associate Dean, Clinical and Institutional Affairs	W.M. Paul (1977 - 1982); J.T. Marotta (1982 -)
Associate Dean, Community Health	J.E.F. Hastings (1975 - 1981); E. Vayda (1981 -)
Associate Dean, Student Affairs	E. Llewellyn-Thomas (1974 - 1984)
Assistant Dean, Student Affairs	J.A.G. McLean (1984 -)
Assistant Dean, Continuing Education	F.B. Fallis (1981 - 1985); C.R. Woolf (1985 -)
Assistant Dean, Undergraduate Medical Curriculum	E.M. Sellers (1982 - 1984); J.R. Fleming (1986 -)
Chief Administrative Officer	J.D. Kraemer (1975 -)
Faculty Development Coordinator	J.W. Browne (1981 - 1984); S.B. Gelmon (1984 - 1986)
Coordinator, Planning Directorate	S.B. Gelmon (1986 -)

1. INTRODUCTION

When I became Dean in 1980 it seemed clear for several reasons that this Faculty had the best opportunity among Canadian medical schools to achieve institutional distinction as measured by international standards. Unfortunately, this prospect was soon threatened by successive reductions of our University base budget and the central administration's decision to discontinue our tenure pool. Both of these developments were ultimately consequences of previous Ontario governments' anti-elitist policies of permitting general underfunding of the university system and of treating the University of Toronto in the same way as the province's other universities, rather than as the single world class academic institution.

In the face of those developments the choice for this Faculty was simple: to "play it safe" by living within our University budget or to "go for it" at the risk of building on a soft foundation.

During the past seven years we have chosen the option of growth and excellence. Unlike the rest of the University, we have conducted wide external searches for almost all University department chairmen, chiefs of departments of major teaching hospitals, directors of divisions and centres, and even positions at the junior level. At a time of general entrenchment we have identified priorities for major development (such as neurosciences, immunology, molecular genetics, oncology, developmental and theoretical biology, geriatrics and clinical epidemiology) while simultaneously protecting existing areas of strength, such as our extensive and excellent medical postgraduate programs and a variety of research endeavours in Toronto's traditional areas of strength.

We have made tenure-stream appointments in the basic science and community health sectors and new full-time clinical appointments primarily with a view to strengthening our research potential. We have encouraged the development of research institutes in our teaching hospitals. We have devoted a great deal of energy to persuading the hospital boards of trustees and administrations that their future is linked closely with that of the Faculty of Medicine, and that our joint mission is one of international excellence. We have developed a Faculty mission statement that reflects this conviction. We have encouraged our scientists and physicians to cultivate collaborations abroad and we have greatly expanded the Faculty's international relations, both informal and contractual. In short, we have attempted to accelerate rapidly this Faculty's transition from a large, very respectable but basically provincially-oriented medical school to one that accepts national leadership and international standards, and aspires to world class excellence.

In summary, we have opted for the more risky course of growth and development in areas of existing strength and of major scientific opportunity, despite University budgetary constraints. At a time of rapid advances in the biomedical sciences, and given the potential created by a critical mass of scientists and teaching hospital resources, the alternative approach would have risked missing a one-time-only opportunity for leadership.

Leadership in our context must be regarded as a collective norm. The Faculty itself is a highly complex entity: there are over 3,000 teaching staff (if all our volunteer teachers are included), 27 departments, nine buildings on the University campus and 11 fully affiliated teaching hospitals. The Dean's Office regularly interacts with many other organizations at the University, within the provincial and federal governments and in other universities.

Needless to say, a strong Dean's Office team is essential. I am extremely grateful to my colleagues who have assisted me over the years. They are listed in Exhibit 1. What is not listed, because no list could do it justice, is the sum of their contributions to the operation of this medical school. Many of these contributions, made long after normal working hours, will not have been apparent to members of the Faculty or to students. My work as Dean benefitted greatly from their contributions, and I have appreciated them immensely.

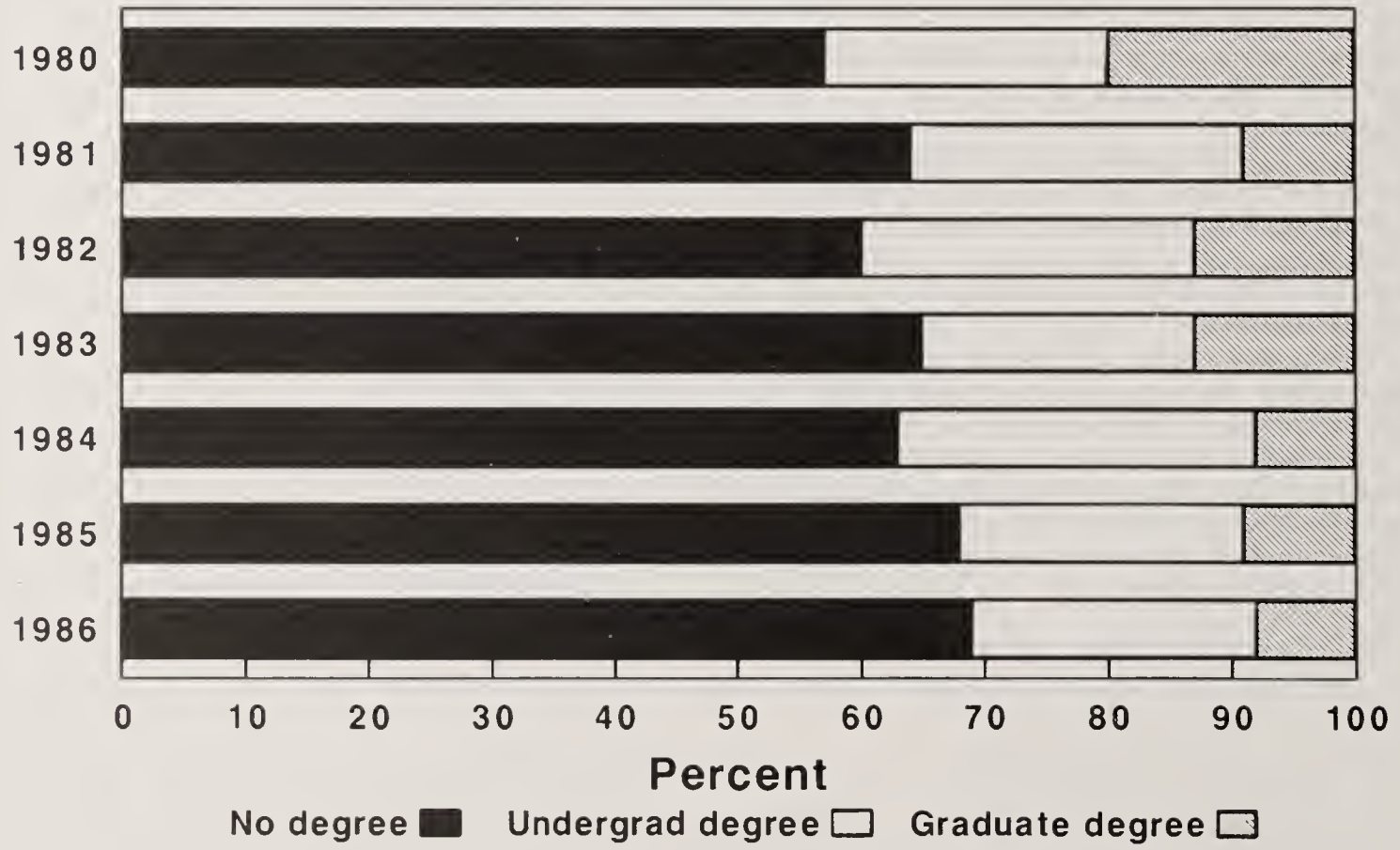
TABLE 1

UNDERGRADUATE MEDICAL PROGRAM: BREAKDOWN OF APPLICANTS 1980 - 1986

	Undergraduate Degree			Graduate Degree			No Degree		
	Applicants	Registrants	% of Total Registrants	Applicants	Registrants	% of Total Registrants	Applicants	Registrants	% of Total Registrants
1980	930	59	23%	336	49	20%	777	144	57%
1981	1013	68	27%	353	21	9%	862	160	64%
1982	912	66	27%	350	31	13%	807	149	60%
1983	969	55	22%	398	32	13%	928	160	65%
1984	1119	73	29%	386	19	8%	1003	158	63%
1985	1062	58	23%	352	22	9%	987	169	68%
1986	1121	57	23%	344	19	8%	1057	172	69%

FIGURE 1

UNDERGRADUATE MEDICAL PROGRAM: EDUCATIONAL BACKGROUND OF REGISTRANTS 1980 - 1986



2. REVIEW OF THE PAST SEVEN YEARS

It is, of course, difficult to provide a concise overview of the accomplishments, trends, obstacles and reviews this large Faculty has experienced over the past seven years. In my *Mid-Term Report*, presented to Faculty Council in March 1984 and distributed to members of the Faculty in the summer of 1984, I reviewed developments over the first three and a half years of my term. This report will focus primarily on the last three and a half years, although many events span much of my term as Dean. It is organized generally around the portfolios of the Associate Deans.

2.1 EDUCATION

One of the primary purposes of the Faculty of Medicine is education. We offer a number of programs to undergraduate, graduate and postgraduate students in the medical and allied health sciences. Two Associate Deans have primary responsibility here; the Associate Dean — Academic Affairs and the Associate Dean — Postgraduate Affairs.

The Academic Affairs portfolio encompasses the undergraduate medical program, continuing education, other undergraduate programs (Physiotherapy, Occupational Therapy, Art as Applied to Medicine, Arts and Science teaching, allied health science), the Division of Studies in Medical Education, the Pre-Internship Program, education support services (including the Division of Teaching Laboratories) and graduate programs. The overall planning, conduct, quality assessment and coordination of these programs is conducted on behalf of the Dean by the Associate Dean — Academic Affairs and his staff. As well, the Associate Dean advises the Dean with respect to academic program policies, quality and new program development within the Faculty, in Arts and Sciences, allied health and the School of Graduate Studies.

The position of Associate Dean — Academic Affairs was held by Dr. William H. Francombe from 1976 to 1984; since 1984 it has been held by Dr. Edward M. Sellers who had served as Assistant Dean — Undergraduate Medical Curriculum from 1982 to 1984. Dr. Robert H. Sheppard has served as Associate Dean — Postgraduate Affairs since 1977. In addition, six other deans have supported the administration of our academic programs. They are Dr. Edward Llewellyn-Thomas (Associate Dean — Student Affairs, 1974 — 1984), Dr. Arline McLean (Assistant Dean — Student Affairs, since 1984), Dr. J. Ross Fleming (Assistant Dean — Undergraduate Medical Curriculum, since 1986), Dr. Fred Fallis (Assistant Dean — Continuing Education, 1981 — 1985) and Dr. Colin Woolf (Assistant Dean — Continuing Education since 1985).

2.1.1 Undergraduate Medical Program

Our undergraduate medical program is the second largest in North America, and enrolls 250 students in each academic year. It continues to attract large numbers of highly qualified applicants.

One of the trends we have observed over the past seven years has been a changing mix of applicants and registrants in terms of their level of educational preparation prior to entering medical school. As can be seen in Table 1, there has been an increase in the number of applicants with undergraduate degrees, yet the proportion registering has remained steady at approximately one quarter of the class. There has been a decrease in the number of registrants who have a previous graduate degree, and a parallel increase in the number of applicants and registrants with no previous degree. This is illustrated in Figure 1. These changes may relate to the availability of the M.D.-Ph.D. program (described subsequently).

A trend we have monitored carefully is the increasing proportion of women entering medical school. This has increased steadily from 25% in 1974 to a high of 40% in 1982. Generally, the proportion of women in the first year medical class is just under 40% (see Figure 2). The number of women applying is also increasing; in 1980, there were 705 women applicants (35% of all applicants), whereas in 1986, 976 women applied (39% of all applicants). The proportion of women applicants, therefore, parallels the proportion of women accepted.

A third indicator which deserves attention is the number of applicants who can be classified as "acceptable high" — i.e., with a grade point average of 3.7 or higher. This is illustrated in Figure 3. It is clear that the proportion of applicants with high GPA's is increasing; 246 applicants in 1980 were rated "acceptable high" as compared with 440 in 1986. Forty-one percent of the 1980 entering class had GPA's of 3.7 or higher; by 1986 this proportion had risen to 75%. Clearly, this Faculty is attracting top students.

The Faculty's medical admissions policy has recently been reviewed by a Dean's task force, chaired by Dr. E.M. Sellers, and it is expected that important changes will be proposed, including acceptance of students from more broadly based educational backgrounds, and recruitment of a larger cadre of students with prior scholarly work or research experience.

An M.D.-Ph.D. program was established in 1982 in collaboration with the School of Graduate Studies for medical students wishing to pursue a career in biomedical research. Approximately six students have been enrolled in this program each year. There is also an undergraduate program in Medical Science, operated by the Institute of Medical Science, in which a small number of medical students are provided each year with research experience and an opportunity for scholarly development.

Virtually all of our students write the Medical Council of Canada qualifying examinations near the end of their fourth year. Although this examination measures only knowledge, and cannot adequately assess the skills and attitudes necessary in the graduating physician, it is reassuring that our students perform at least as well as or better than students from the other Canadian schools on the knowledge questions and the patient management problem questions. In the past six years the mean grade achieved by University of Toronto students has been equal to or above the national mean. In 1986 our students scored 6.4% above the national mean.

Nevertheless, it seemed clear when I became Dean that changes were required in serveral aspects of the medical student experience.

Revisions to the Medical Undergraduate Program

In 1981, the Undergraduate Medical Curriculum Committee (UMCC) initiated a major review of the undergraduate medical program. This review resulted in a curriculum renewal report which was received and approved by Faculty Council in October 1983. This report identified the following problems:

- The goals and objectives of the curriculum were not being met because of insufficient emphasis on research, health in the community, ambulatory teaching, bioethics, continuing learning,

FIGURE 2

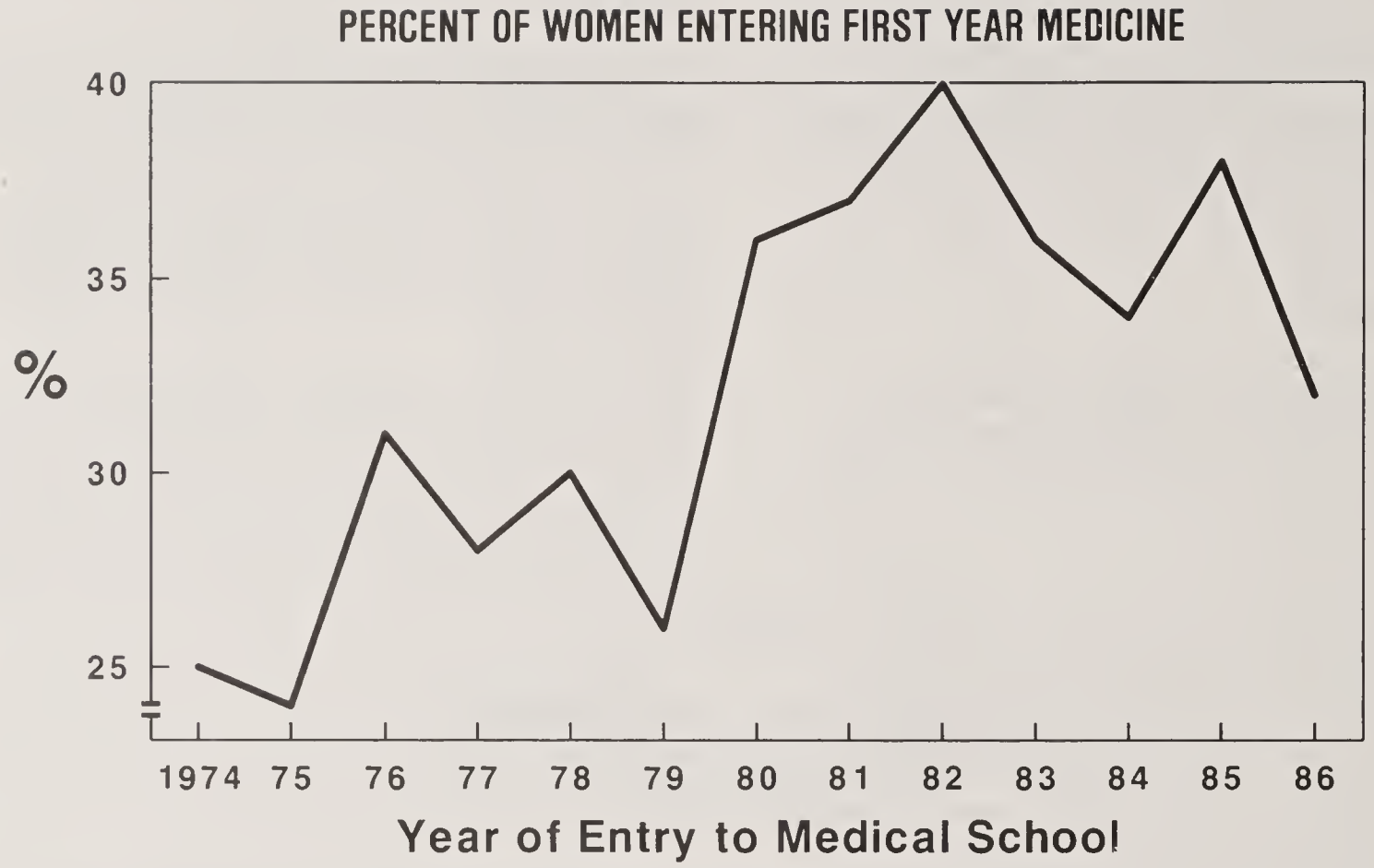
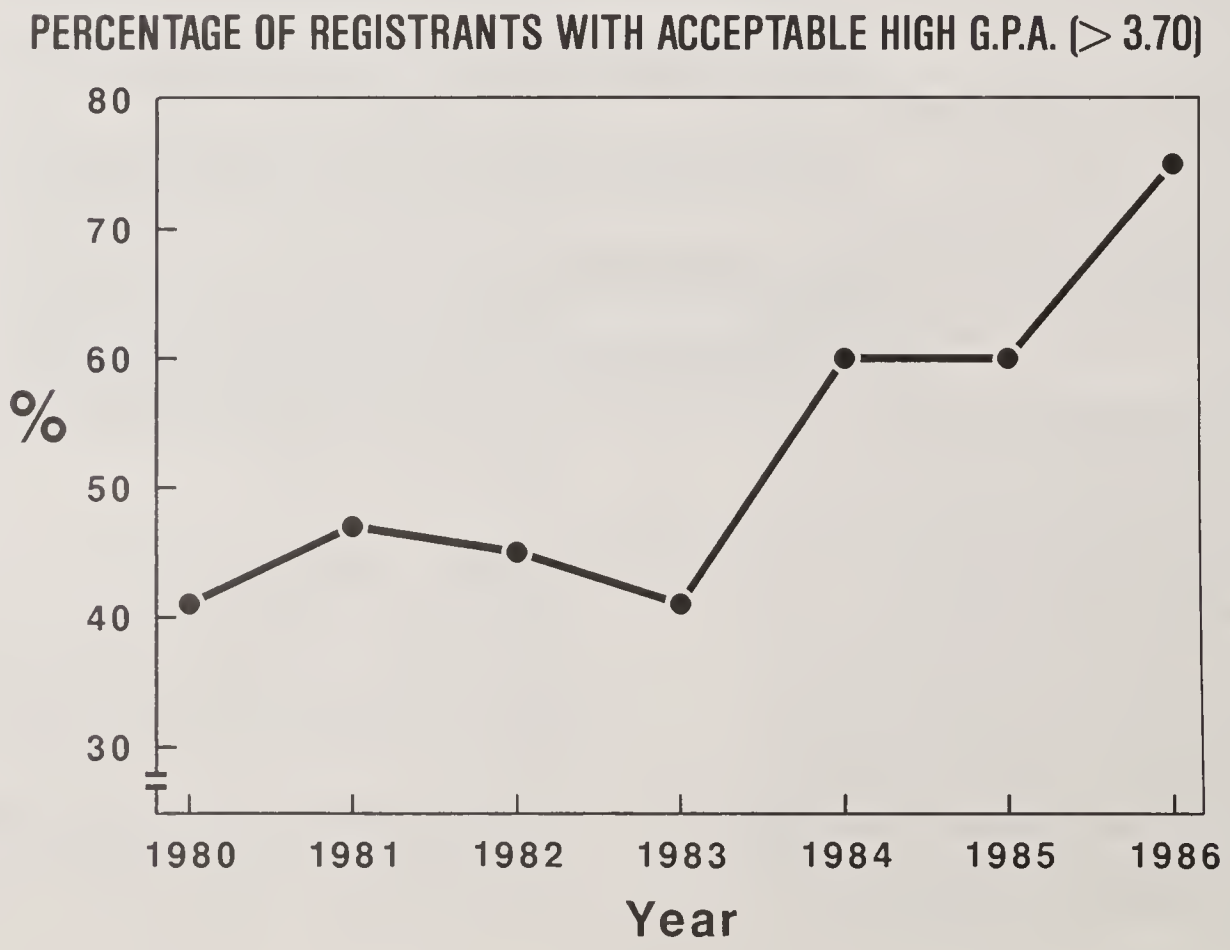


FIGURE 3



critical appraisal, integrating basic and clinical science, and evolving needs of health care systems.

- There were insufficient opportunities for self-directed learning.
- There was too much highly structured didactic teaching.
- Elective time was not being used to full potential.
- Planning, communications and coordination among UMCC, faculty and departments was poor.
- Undergraduate medical education was undervalued by faculty members.
- Steps to improve the learning environment, e.g. stress reduction, had not been undertaken.

The curriculum renewal report has set in motion a number of initiatives, still in progress, designed to produce a shift in the orientation of our medical student program. It is intended that these changes continue to be implemented over the next few years. They will require far more self-directed learning by students and involve them in research and other projects with faculty members for which academic credit will be given. Programs of advanced study in selected areas will be possible for individual students, utilizing existing courses, elective time and summers. Admissions policies will be changed to reflect the altered goals.

All Canadian and American medical schools are reviewed regularly by the U.S. Liaison Committee on Medical Education and the Committee for the Accreditation of Canadian Medical Schools. Our undergraduate medical program was fully accredited for a seven year period in 1983, and the final report from the LCME/CACMS visiting reviewers was highly complimentary of our students, teachers and programs.

In 1985, UMCC initiated a study of the educational implications of hospital mergers, including the merger of Toronto Western and Toronto General Hospitals and the possible merger of other teaching hospitals. Shifts of hospital divisions, programs, staff and patients can have far-reaching consequences for the hospital-based component of our undergraduate medical program. During this review, a number of deficiencies were identified in the existing hospital educational programs and recommendations have been made to address these, including careful evaluation of hospital teaching; recognition, training and rewarding of teaching staff; enhanced patient base for teaching (including more ambulatory care teaching); and increased flexibility in hospital-based curricula to capitalize on the unique strengths and resources of individual institutions. A proposal was developed for major curriculum changes at the merged Toronto Hospital that would provide students with a less structured curriculum, fewer lectures and scheduled teaching, more opportunity for self-directed and independent study, case-based learning, a tutorial system, more electives and selectives, and more opportunity for research and expanded clinical experience. This proposal is under careful study, not only with respect to the Toronto Hospital but also our other teaching hospitals.

Faculty Education Committee

An increased commitment to the undergraduate medical program was enunciated in my statement to the Faculty planning conference on education in June 1986. Emphasizing that undergraduate medical education is to be given a very high priority, I announced the establishment of a Faculty Education Committee responsible for overall strategic planning in education; development of a comprehensive course evaluation project; a program to help departments assess teaching effectiveness; a program to explore the introduction of computer assisted instruction; a faculty career development program; and a program of education research.

During the past few years, a number of key appointments have been made specifically to strengthen the educational programs. Two clinical departments now employ Ph.D. experts in medical education and a third department is recruiting a similar person. The Academic Affairs portfolio has expanded with the recruitment once more of an Assistant Dean — Undergraduate Medical Curriculum in addition to the Assistant Dean — Student Affairs.

Teachers

Establishing the importance of undergraduate medical education includes more appropriate recognition and rewarding of our excellent teachers. The new W.T. Aikins teaching award program was introduced in 1985; in the last three years, up to six faculty members per year who have shown outstanding abilities in individual teaching, course and program development, and innovative teaching methods have been selected from large numbers of nominees. The award winners are listed in Table 2. Promotions committees have given increased emphasis to the excellence in teaching. A Dean's Committee, chaired by Dr. William Paul, has developed a protocol for a "teaching dossier" so that faculty members can document their teaching activities for review by promotions committees. The Division of Studies in Medical Education (DSME) is offering a "teaching dossier service" to help individual faculty members record the appropriate information. Faculty development programs are well established in several departments which provide workshops and seminars in teaching methods; a faculty career development program has now been established by DSME (including a range of activities from a consultation service to individual departments); and facilitation of workshops and other strategies to enhance teaching abilities (including a master's program in medical education in conjunction with the Ontario Institute for Studies in Education).

Students

In 1983, I established a task force, chaired by Dr. E. Lansdown, to study the issue of stress in our medical students. In its very thorough and far-reaching study, the task force identified a number of stressors in the curriculum, examinations, the ambience of our medical school, and our admissions process. Inadequate communications between students and faculty, a sense of isolation and loneliness in our large faculty and large city, and lack of attention given to the special problems of minority groups were some of the issues identified. Steps have already been taken to address many of these issues. Better orientation of our students upon admission and re-orientation of students in the second and third years has helped. The establishment of a medical education newsletter has helped communications. A series of weekly breakfasts allows up to 15 students at a time to meet informally with deans and faculty members. A series of special seminars and/or lectures addressing issues of lifestyle, stress management and career selection is scheduled for next year.

Curriculum

Clinical teaching has been introduced into Year 1 and is very popular with the students. It provides an opportunity for students to go to the hospitals, meet clinicians, and learn interviewing skills on simulated and genuine patients. A program of teaching with simulated patients has been developed, and a bank of professional patients is now available for this and other programs. The interviewing skills program has been expanded into Years 2 and 3, helping the students develop more sophisticated skills as their clinical expertise develops. A course on Medical Humanities and Ethics has been introduced into Year 1. A new course in

TABLE 2

W. T. AIKINS AWARD WINNERS

1985

1) Dr. Ken Robb, Medicine, Toronto Western Hospital
Award for Individual Teaching Excellence

2) Dr. Alexander Roberts, Anatomy
Award for Individual Teaching Excellence

3) Dr. Dean Chamberlain, Pathology, Toronto General Hospital
Award for Excellence in Course Coordination and Development

4) Dr. Barbara Stubbs, Family and Community Medicine, Toronto General Hospital
Award for Development and Use of Instructional Media

5) Dr. Narasimhan Ranganathan, Medicine, St. Michael's Hospital
Award for Development and Use of Instructional Media

1986

1) Dr. David Shaul, Obstetrics and Gynaecology, Mount Sinai Hospital
Awards for Demonstrated Excellence in Course Development and for Excellence in Teaching in Human Sexuality

2) Dr. Ian Taylor, Anatomy
Award for Excellence in Course Coordination and Development

3) Dr. Catharine Whiteside, Medicine, Toronto Western Hospital
Award for Individual Excellence in Bedside Undergraduate Medical Teaching

1987

1) Dr. Harry Himal, Surgery, Toronto Western Hospital
Award for Individual Teaching Performance

2) Dr. Uwe Ackermann, Physiology
Award for Individual Teaching Performance

3) Dr. John Provan, Surgery, Wellesley Hospital
Award for Course Coordination and Development

4) Dr. Paul McCleary and Dr. Michael Shier, Obstetrics and Gynaecology, St. Michael's and Wellesley Hospitals
Award for Course Coordination and Development

5) Dr. Mary L. Chipman, Preventive Medicine and Biostatistics
Award for Innovative Teaching Methods

TABLE 3

TEACHING LOAD ANALYSIS FOR BASIC SCIENCE DEPARTMENTS[1]

Department	Medicine	Rehab. Med.	Arts & Sci.	Dentistry	Nursing	Pharmacy	P.& H.E.	S.G.S.[3]	Woodsworth	Other	TOTAL
Anatomy	1576	448	603	475	(	124	)[2]	101	69	110	3506
B.B.D.M.R.[4]	92	—	64	—	—	—	—	101	—	—	257
Biochemistry	138	—	702	107	39	—	—	52	104	—	1142
Med. Biophysics	58	—	31	—	3	—	—	318	—	24	434
Med. Genetics	343	—	161	13	—	—	—	72	—	—	589
Immunology	48	—	—	—	—	—	—	72	—	—	120
Inst. of Biomed. Eng.	66	—	—	—	—	—	—	350	—	—	416
Microbiology	78	—	1274	—	156	104	12	80	78	39	1821
Nut. Sciences	48	—	845	20	39	6	39	298	26	—	1321
Pharmacology	174	—	500	76	—	76	—	180	—	—	1006
Physiology	242	77	1038	70	131	82	131	202	131	12	2116

1. Lecture and laboratory courses - Total student-staff contact hours
2. An amalgamated anatomy course is given to Nursing, Pharmacy and P. & H.E. students.
3. School of Graduate Studies: Lecture and/or seminar hours in graduate courses.
4. Banting and Best Department of Medical Research: Undergraduate/Graduate teaching is done through cross-appointments (e.g., in Biochemistry and Physiology).

Community Health has been introduced into Years 2 and 4, in an attempt to deepen understanding about health in the community, behavioural science, epidemiology, preventive medicine, health administration, and occupational and environmental health through lectures, seminars and workshops. An Ambulatory Care program has been developed in Year 4 as an elective and is being expanded; it provides an opportunity for students to see ambulatory patients in a variety of community settings.

An expanded program of electives has been established. One full day each week is set aside for elective study during the first three years, and a 12 week elective period occurs in the clerkship. This now forms a very important part of the undergraduate curriculum, providing students with a vast array of opportunities to study basic and/or clinical sciences in Canada and abroad.

A "Core Selective" program has been introduced into Year 1, and provides an opportunity for in-depth study and research in an area of particular interest to the individual (each selective is clearly defined and rigorously supervised). This program offers the first year students an opportunity to meet faculty members, to assume responsibility for their own learning, to move early into clinical settings, and to pursue basic science interests. It is planned next to extend the core selective program into some of the existing courses in 2nd and 3rd year.

A number of important innovations have been introduced into existing courses in recent years. The Pharmacology course now teaches and evaluates students through a series of "Patient-Oriented Problem Sets." The Anatomy course has been extensively revised and now encourages the students to relate basic science with clinical science in a unique way. The number of lectures presented is gradually being decreased in favour of more small group teaching, opportunities for individual study and hospital teaching time.

An annual Research Day has been established, providing a forum for those students who have engaged in research to present their material to other students and faculty members. It is hoped that this will increase awareness of the challenges of research within the undergraduate student body.

The Course and Program Evaluation Subcommittee of UMCC began an extensive program in 1984, evaluating several undergraduate courses each year and recommending course changes where appropriate. The evaluation involves student questionnaires and student and faculty interviews.

Individual hospital initiatives are being encouraged. For example, a program in medical ethics has been introduced into the clerkship year at Sunnybrook Medical Centre; these weekly seminars are very popular with the clerks. Toronto Western Hospital is introducing "Grand Rounds" for the Year 3 students who will work up and present cases to students and faculty.

New Curricular Initiatives

We are carefully studying the desirability of admitting more students with conferred degrees, students with broader educational backgrounds, as well as students with research capability and experience. The implications and advantages of a decrease in the size of our undergraduate student body also are being studied.

We are in the process of introducing a long overdue course in critical appraisal; this should help students apply rules of evidence and logic to clinical, investigative and published data, in order to estimate validity, reliability, credibility and utility of such information. We are continuing to explore ways of increasing opportunities for self-directed learning and problem-solving, and are studying the implications of computer-assisted learning in specific areas of the curriculum.

Plans have been developed to increase the roles of the Departments of Medicine and Surgery in the planning and implementation of organ-based "systems teaching." The possibility of integrating or streaming basic science courses in Year 1 is being studied, so that instead of being isolated "blocks" of departmentally-based teaching to be passed and forgotten, they become more coherent and meaningful. A task force is studying the possibility of integrating all undergraduate neuroscience teaching into a single program rather than the present isolated "blocks" of neuroanatomy, neurophysiology and clinical neuroscience.

2.1.2 Other Undergraduate Programs

In addition to the medical program, the Faculty is reponsible for teaching at the undergraduate level in a number of other areas.

Art as Applied to Medicine

The Department of Art as Applied to Medicine (AAM) was chaired by Professor Nancy Joy from 1973 to 1985. In 1985, Professor Alex Wright became Acting Chairman for one year and was succeeded in 1986 by Professor Linda Wilson-Pauwels. Over the past seven years, a series of reviews has confirmed the importance of strengthening this program, and the need to develop it to a a Masters level, despite current funding restraints.

Our objective is to have this program accredited by the Association of Medical Illustrators. To this end we have initiated extensive cross-appointments between the AAM Department and the Department of Anatomy. This liaison could lead to a possible amalgamation of the two departments which would provide an avenue for AAM to apply to the School of Graduate Studies.

Significant recent achievements include the addition of five Medical Artist in Research Student Scholarships, four from Sandoz Inc. and one from the Canadian Plastic Surgeons Association. These scholarships make it possible for student artists to spend 12 weeks working directly in a research laboratory producing visual renderings that will creatively augment experimental data.

We have broadened our curriculum to include an applied art research project in AAM Year III. A series of seven professional development seminars were incorporated to establish liaisons among staff, students, alumni and working professionals, to help keep members of the medical art profession abreast of changes in the health care field.

Rehabilitation Medicine

The Faculty clearly recognizes the importance of health promotion, disease prevention, minimization of the consequences of illness and the optimization of and return of function. Nevertheless, the Department of Rehabilitation Medicine underwent a period of uncertain academic future in the early 1980's. To some extent this continues for some components of the Department. Under the protem leadership of Dr. Joseph Marotta, who was Acting Chairman of the Department at the time, a detailed review and reappraisal of the future of the Department was conducted. As a result, the goals of the Physiotherapy and Occupational Therapy programs were clarified. It was recognized that there was an urgent need to recruit new faculty with graduate degrees and upgrade and modernize the undergraduate program.

As a result, revised four year undergraduate programs for Physiotherapy and Occupational Therapy were developed and approved by Governing Council in 1985. The new programs are entirely under the auspices of the Faculty with direct entry into the program from the final year of high school. Previously, students enrolled in Arts and Science for their first year. Judging by initial student and practitioner evaluation, the new programs, with

FIGURE 4

GRADUATE (S.G.S.) ENROLLMENT TRENDS

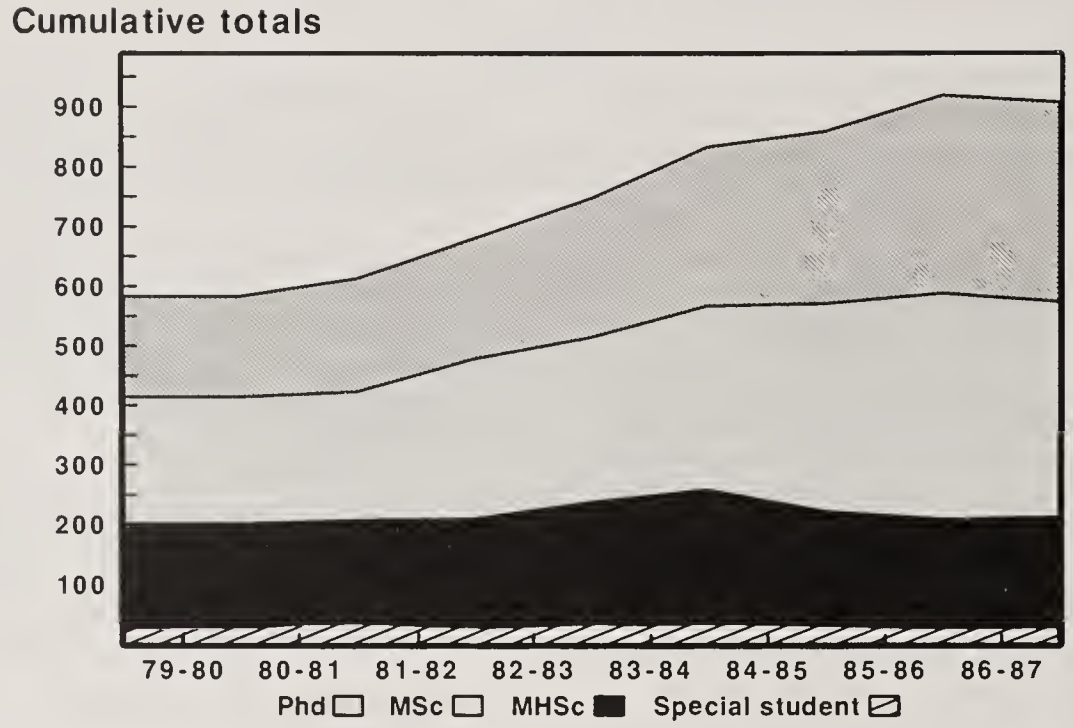


TABLE 4

FACULTY OF MEDICINE GRADUATE PROGRAMS

Enrollment 1980/81 and 1986/87

Graduate Department	M.Sc. 1980/81	M.Sc. 1986/87	M.H.Sc. 1980/81	M.H.Sc. 1986/87	Ph.D. 1980/81	Ph.D. 1986/87	Special Student 1980/81	Special Student 1986/87	Total 1980/81	Total 1986/87	% Change Over 6 yrs.
Anatomy	6	9	—	—	3	16	3	—	12	25	+ 108%
Biochemistry	22	44	—	—	21	40	3	—	46	84	+ 83%
Clinical Biochemistry	13	16	—	—	7	15	—	—	20	31	+ 55%
Community Health	23	36	129	134	13	53	18	21	183	244	+ 33%
Immunology	9	9	—	—	7	17	—	2	16	28	+ 75%
Institute of Biomed. Engineering	—	—	—	9	—	—	—	—	—	9	—
Institute of Medical Science	32	54	—	—	19	27	—	—	51	81	+ 59%
Medical Biophysics	18	46	—	—	38	73	1	—	57	119	+ 109%
Microbiology	21	36	—	—	7	10	—	—	28	46	+ 64%
Nutritional Sciences	17	23	—	—	10	8	1	—	28	31	+ 11%
Pathology	6	19	—	—	8	13	2	2	16	34	+ 113%
Pharmacology	28	37	—	—	25	30	8	2	61	69	+ 13%
Physiology	21	33	—	—	32	31	4	2	57	66	+ 16%
Speech Pathology	—	—	38	40	—	—	—	—	38	40	+ 5%
TOTAL	**216**	**362**	**167**	**183**	**190**	**333**	**40**	**29**	**613**	**907**	**+ 48%**

TABLE 5

O.C.G.S. REVIEWS - FACULTY OF MEDICINE GRADUATE DEPARTMENTS

Graduate Department	Most Recent O.C.G.S. Review and Report	Next Review Scheduled	Rating
Anatomy	82/83 - 1984	89/90	M.Sc. Ph.D. - B
Biochemistry	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Clinical Biochemistry	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Community Health	84/85 (in process)	91/92	
Immunology	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Inst. of Biomedical Engineering		89/90	
Inst. of Medical Science	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Medical Biophysics	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Microbiology	82/83 - 1984	89/90	M.Sc. Ph.D. - C
Nutritional Sciences	85/86 (in process)		
Pathology	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Pharmacology	82/83 - 1984	89/90	M.Sc. - B Ph.D.-A
Physiology	82/83 - 1984	89/90	M.Sc. Ph.D. - A
Speech Pathology	83/84 - 1987	90/91	M.H.Sc. - B

greater flexibility and opportunity for project work, are going to be very successful.

The physiotherapy program is the largest in Canada, enrolling 66 students per year from an applicant pool of 550. In 1986, Professor Ruth Bradshaw stepped down as Director of the program after many years of leadership. Professor Patricia Faris served as Acting Director in 1986-1987. An internal review of the academic quality of the Division, undertaken in 1986 prior to initiating a search for a new director, identified the need for a strengthened research base in this Division. A search is now underway for a new director.

The occupational therapy program enrolls 44 students per year from an applicant pool of 200. In 1983, Dr. Robin Schaffer was appointed as the new Director of this program. With a background in occupational therapy, research and education she has provided the leadership that has set the program along a path to strengthen its academic quality.

Increased faculty research and graduate programs are needed if these programs are to achieve international stature. Careful faculty recruitment and educational innovation are key elements of the current planning in this area. Therefore, Physiotherapy and Occupational Therapy will begin to develop graduate M.Sc. programs. This goal is seen as the logical outcome of our expectation that they will be academic leaders in their fields. Concurrent with the development of graduate programs will be the development of focussed research programs. My hope is that a combined graduate program within this Department will be developed.

Finally, recent studies of health manpower needs indicate that more physiotherapists, occupational therapists and speech pathologists are needed. Expansion of some of these programs under the leadership of the chairman, Dr. M. Milner, is urgently needed. New funds will be required to do this.

Teaching in Other Faculties

The Faculty of Medicine is responsible for providing a substantial quantity of teaching to students enrolled in several other faculties. We provide courses in anatomy, physiology, biochemistry, pathology, pharmacology, microbiology, community health and other subject areas to students enrolled in other health science faculties (Dentistry, Nursing, Pharmacy, Physical and Health Education, Social Work) as well as to students in the Faculty of Arts and Science.

A process of continuing re-evaluation of the academic needs of these students is needed along with exploration of how best to ensure continued funding and high quality of the programs. In particular, our large commitment to Arts and Science teaching, while it remains a high priority, is of great concern. The teaching load has grown since 1980 (present commitments are illustrated in Table 3); since these courses are approved by the Faculty of Arts and Science, we have at times been unable to anticipate the impact these courses will have on our Faculty's budget and priorities.

To address these problems, an interfaculty group was formed to recommend ways to improve relations between the Faculties of Arts and Science and Medicine, and to improve undergraduate teaching. This group has recommended that an Undergraduate Coordinator of basic medical science teaching in the Faculty of Arts and Science be appointed, and that regular meetings of the undergraduate secretaries in the basic science departments be held. In addition, the Dean of Arts and Science has established a "Department of Basic Medical Sciences" in his Faculty that is chaired by the Associate Dean — Basic Sciences from the Faculty of Medicine. This "department" has improved communication between the two faculties, and already has solved some irritating problems. In the future, no new Arts and Science courses taught by our basic science departments will be approved without the concurrence of the Associate Dean — Basic Sciences.

2.1.3 Graduate Programs

The 14 graduate departments situated in the Faculty are the academic responsibility of the School of Graduate Studies. However, we manage these programs and provide budget and personnel. The quality of our faculty members, graduate programs and research are inextricably bound. In turn this quality influences the quality of our undergraduate education programs. Since 1980, all of the graduate departments have increased in numbers of students enrolled, some very considerably (see Figure 4). This increase ranges from 5% to 113%; overall Faculty of Medicine graduate enrollment has increased by 48% (see Table 4). All graduate programs are reviewed at regular intervals by the Ontario Council on Graduate Studies; Table 5 summarizes the present rating of these departments.

We must now initiate a process which links Faculty and departmental plans to size, quality and priority, and to graduate student enrollment. This will require development of an academic plan that explicitly links graduate programs to complement plans and budgeting. It seems inevitable that, in areas of overlap among departments, a multi-departmental programmatic approach will be needed. We look forward to close collaboration with the School of Graduate Studies in addressing these matters.

2.1.4 Postgraduate Medical Programs

Postgraduate medical training is a major Faculty priority, which has been capably led by Dr. Robert H. Sheppard as Associate Dean throughout my term. Through its 1,700 postgraduate trainees, the Medical School interacts directly with both the general public and the affiliated teaching hospitals. We currently have 42 postgraduate training programs recognized by the Royal College of Physicians and Surgeons of Canada, in addition to a strong family medicine program and a large rotating and comprehensive internship program. These programs involve 18 fully or partially affiliated teaching hospitals on a regular basis, as well as other selected community hospitals and teaching practices. As can be seen from Tables 6 and 7, programs in Surgery, Medicine, Psychiatry, Anaesthesia and Family Medicine have grown over the past seven years, while others have stabilized. Indeed, this education experience extends even to the remote regions of Northern Ontario through the University of Toronto Sioux Lookout program, designed to provide high quality patient care for the native Canadian population of that zone and to provide our students with experience in a remote, rural area.

The scope and quality of the postgraduate educational programs are recognized nationally and internationally. Demands for educational opportunities at the University of Toronto by physicians from elsewhere in the world continue to grow. The high standards of postgraduate education are reflected in the excellent performance of University of Toronto trainees on the Royal College examinations and the Certification Examinations of the College of Family Physicians. Currently, all but one of our 42 specialty programs have received full approval from the Royal College. Other indicators of the high quality of the postgraduate programs are the rigid acceptance guidelines developed by the Residency Selection Committees and the intense competition that exists for training positions in the various disciplines.

TABLE 6

POSTGRADUATE MEDICAL TRAINEES

RESIDENTS AND FELLOWS — 1980-81 AND 1986-87

	1980-81				1986-87			
Program	**MOH**	**Non-MOH**	**Total**	**# Sites**	**MOH**	**Non-MOH**	**Total**	**# Sites**
SURGERY:								
General	37.00	4.00	41.00	11	37.50	26.50	64.00	11
Cardiovascular	18.00	7.00	25.00	6	8.00	17.90	25.90	5
Vascular	2.00	1.00	3.00	2	2.00	1.00	3.00	2
Thoracic	1.00	1.00	2.00	1	2.00	3.93	5.93	2
Neurosurgery	16.00	9.00	25.00	5	16.00	21.09	37.09	9
Orthopaedic	31.00	23.00	54.00	8	27.50	46.55	74.05	10
Paediatric	3.00	—	3.00	1	2.00	1.00	3.00	1
Plastic	12.00	7.00	19.00	9	12.50	7.08	19.58	7
Urology	18.00	1.00	19.00	8	18.50	10.00	28.50	9
Surgery Total	138.00	53.00	191.00	51	126.00	135.05	261.05	56
OBSTETRICS AND GYNAECOLOGY	38.00	4.00	42.00	11	35.00	5.00	40.00	9
OPHTHALMOLOGY	21.00	7.00	28.00	8	21.00	16.21	37.21	6
OTOLARYNGOLOGY	24.00	2.00	26.00	7	19.33	5.59	25.92	8
MEDICINE:								
General	130.00	3.00	133.00	9	117.69	18.58	136.27	8
Alc. and Drug	—	2.00	2.00	1	—	1.00	1.00	1
Cardiology	12.00	17.00	29.00	6	12.00	10.00	22.00	7
Clin. Haematology	6.00	1.00	7.00	4	5.00	4.00	9.00	3
Clin. Immunology	4.00	—	4.00	3	2.00	1.00	3.00	1
Clin. Pharmacology	—	5.00	5.00	2	3.77	5.00	8.77	4
Dermatology	9.00	1.00	10.00	7	9.00	2.00	11.00	7
Emergency Medicine	—	—	—	—	8.92	—	8.92	2
Endocrinology	6.00	7.00	13.00	5	5.00	11.00	16.00	4
Gastroenterology	8.00	5.00	13.00	6	7.00	4.58	11.58	6
Geriatrics	—	2.00	2.00	2	5.00	2.00	7.00	2
Infectious Dis.	1.00	—	1.00	1	3.00	—	3.00	2
Medical Oncology	6.00	5.00	11.00	2	6.00	5.36	11.36	1
Nephrology	6.00	5.00	11.00	5	5.00	13.00	18.00	6
Neurology	13.00	6.00	19.00	6	14.00	9.24	23.24	9
Resp. Disease	7.00	3.00	10.00	5	6.00	2.00	8.00	5
Rheumatology	6.00	6.00	12.00	4	5.00	6.81	11.81	3
Medicine Total	214.00	68.00	282.00	68	214.38	95.57	309.95	71
PAEDIATRICS	82.00	58.00	140.00	2	86.00	55.34	141.34	3
RADIOLOGY:								
Diagnostic Rad.	55.00	8.00	63.00	8	48.29	10.08	58.37	8
Radiation Oncology	14.00	5.00	19.00	1	16.05	8.66	24.71	1
Nuclear Medicine	2.00	1.00	3.00	3	1.00	—	1.00	1
Radiology Total	71.00	14.00	85.00	12	65.34	18.74	84.08	10
PHYS. MED. & REHAB.	14.00	1.00	15.00	5	6.91	3.00	9.91	4
PSYCHIATRY	99.00	27.00	126.00	14	98.00	42.88	140.88	15
ANAESTHESIA	69.00	12.00	81.00	8	83.50	19.89	103.39	9
LABORATORY:								
Anatomical Path.	43.00	2.00	42.00	10	31.41	3.05	34.46	9
Haem. Pathology	3.00	—	3.00	3	3.50	0.50	4.00	3
Neuropathology	2.00	1.00	3.00	3	2.50	—	2.50	2
Med. Biochemistry	4.00	1.00	5.00	2	2.08	—	2.08	2
Med. Microbiology	7.00	—	7.00	4	5.00	—	5.00	1
Laboratory Total	59.00	4.00	60.00	22	44.49	3.55	48.04	17
COMMUNITY MEDICINE	9.00	3.00	12.00	1	14.00	5.00	19.00	1
FAMILY MEDICINE	65.00	1.00	66.00	7	78.00	2.32	80.32	7
TOTAL	**903.00**	**254.00**	**1,154.00**	**216**	**891.95**	**408.14**	**1301.09**	**216**

A program as large as this requires an organizational structure which will permit ready communication among trainees, educators and hospital administrations. The Faculty Postgraduate Medical Education Committee (PGME) provides such leadership particularly with regard to admission standards, assignment of trainees to hospital posts and assessment of programs and postgraduate students. The Committee is chaired by the Associate Dean, and is composed of program directors from the major residency programs with representation from the chief executive officers of the teaching hospitals and from the residents. Each residency program director has his/her own committee at the department level.

Within the Postgraduate Medical Education Office, there is a computerized registration and payroll system which provides details regarding all aspects of the postgraduate program and the participating trainees. This links with the Ontario Physician Manpower Data Centre, and has contributed to the greatly improved manpower planning process developing within the province. The Data Centre was directed by Ms. Jacquie Cox from 1978; since 1985, Ms. Martha Lonsdale has served as the Project Officer.

Currently, the PGME is completing an intensive review of all postgraduate programs. Reports of the individual programmatic surveys are circulated not only to the educators and the trainees, but are discussed in detail by the PGME. In addition, these reports will be made available when the Royal College conducts its next review of specialty programs in 1989.

Many improvements have occurred over the last seven years with respect to program quality, the number of programs and the steadily increasing academic component of the educational experience. Special attention is being paid to our obligation to provide academic and clinical leaders in various medical fields. Programs in Emergency Medicine, Geriatric Medicine, Clinical Pharmacology, Paediatric Cardiology, Neonatology and Maternal and Fetal Medicine are well established. Programs in fields such as Critical Care and Occupational Medicine are being developed.

While the University of Toronto provides strong core training in the general medical fields, its unique position in Canadian medicine relates to the in-depth experience provided for postgraduate students at an advanced level. A great variety of fellowship and "topping off" programs are available and are in national and international demand. Every effort is being made to encourage further development in this sphere.

Although the postgraduate programs are a major source of pride for the Faculty (and one of the reasons for its excellent reputation), various issues have risen which must be addressed with care. If dealt with appropriately, these could further strengthen the quality of postgraduate medical education.

One particular problem has been the determined effort by the Provincial Government to restrict entry into the postgraduate medical education system. This poses an immediate threat to educational and clinical quality since it can result in an adverse alteration in the education/service mix in the teaching hospitals. In the face of proposed cutbacks over the next five years, the PGME is carefully studying all disciplines, with the intention of re-organizing the educational process in the trainees' best interests. Clearly, this will tax the ingenuity of both our educators and hospital administrators, and great care must be taken to preserve the harmony existing between the University and teaching hospitals. Alternative mechanisms must be established to provide quality patient care in the teaching institutions from which postgraduate trainees have been removed or their numbers reduced.

This problem is compounded by entry restrictions imposed upon graduates of foreign medical schools, as a result of which their number will decrease substantially over the next few years.

A further issue under study is the nature of the "patient mix" within the teaching institutions. In the larger tertiary care hospitals many of the medical problems are unusually complex and relatively uncommon (and, therefore, not ideal for teaching interns, family medicine residents and residents in other specialties). Thus, greater attention must be paid to the teaching potential of the excellent partially affiliated institutions which have a patient mix more suited to this core educational process.

Also of importance are the changes under discussion regarding pre-registration training. With greater emphasis on the development of Family Medicine programs and two year pre-registration requirements, it is almost certain that the size of the Family Medicine program at the University of Toronto will have to be increased substantially. Thus, there will be a roll-over of rotating internship posts into first year Family Medicine and additional second year positions will be required.

2.1.5 Pre-Internship Program

At the request of the Ministry of Health, in 1987 the Council of Ontario Faculties of Medicine developed a pre-internship program to provide detailed assessment and remedial instruction for foreign medical graduates prior to entry into an approved internship. Concurrent with the funding of this program, the Ministry guaranteed funding of 24 internship positions for individuals satisfactorily completing the pre-internship program to ensure them the opportunity to obtain general licensure in the province.

The pre-internship program is a 36 week program of clinical study for 24 carefully selected foreign medical graduates. The program administration and clinical skills assessment unit are located in our Faculty; Dr. John Ross is the program director. Pre-interns will be trained in each Ontario medical school, half of them in Toronto. The program will be offered for the first time in 1987.

2.1.6 Continuing Education

The Continuing Education (CE) office facilitates and coordinates continuing education courses mounted by our departments. The program was accredited in 1983 for the first time for a five year period. In the long term, the strength of this program and our Faculty's reputation in this area will hinge on the development of an academic base to the program complemented by a high quality service facility. A comprehensive plan to offer a broad range of innovative programs in this area is underway.

Under Dr. C. Woolf's direction, approximately 70 CE courses are sponsored by the Faculty of Medicine each year with an attendance of over 5,000 participants. Courses offered receive College of Family Practice and AMA Category I credits. A publication entitled "Ten Steps to Developing a Continuing Medical Education Course" has been produced, and a Continuing Education Newsletter is issued each spring and fall which provides information about CE activities, as well as a list of short courses for future registration. The CE Newsletter is distributed by the Ontario Medical Association to 17,000 physicians throughout Ontario.

An Academic Continuing Education Fund has been created to support research aspects of CE by members of the Faculty, the development of a Faculty CE resource centre, and promotion of CE.

TABLE 7

POSTGRADUATE MEDICAL TRAINEES
INTERNS — 1980-81 AND 1986-87

	1980-81				1986-87			
Program	MOH	Non-MOH	Total	# Sites	MOH	Non-MOH	Total	# Sites
COMPREHENSIVE:								
Family Medicine	64.00	—	64.00	8	67.00	—	67.00	7
Medicine	62.00	1.00	63.00	7	61.00	1.00	62.00	8
Paediatrics	8.00	—	8.00	1	5.00	—	5.00	1
Surgery	20.00	—	20.00	5	23.00	—	23.00	5
SUB TOTAL	154.00	1.00	155.00	21	156.00	1.00	157.00	21
ROTATING/GEN. COMP.:								
Doctors	18.00	2.00	20.00		12.00	8.00	20.00	
Mount Sinai	21.00	1.00	22.00		20.00	1.00	21.00	
North York Branson	12.00	7.00	19.00		7.00	10.00	17.00	
North York General	14.00	—	14.00		14.00	—	14.00	
St. Joseph's	38.00	1.00	39.00		28.00	15.00	43.00	
St. Michael's	21.00	4.00	25.00		22.00	1.00	23.00	
Scarborough General	12.00	3.00	15.00		12.00	5.00	17.00	
Sunnybrook	—	—	—		—	5.00	5.00	
Toronto East General	24.00	1.00	25.00		24.00	6.00	30.00	
Toronto General	16.00	—	16.00		13.00	—	13.00	
Toronto Western	12.00	—	12.00		11.00	1.00	12.00	
Wellesley	8.00	—	8.00		7.00	—	7.00	
Women's College	3.00	3.00	6.00		3.00	4.00	7.00	
York Finch General	—	—	—		—	16.00	16.00	
SUB TOTAL	199.00	22.00	221.00		173.00	72.00	245.00	
TOTAL	**353.00**	**23.00**	**376.00**		**329.00**	**73.00**	**402.00**	

Telemedicine for Ontario (TFO) is an interactive radio system of teaching and learning which has been developed over the last five years and particularly during 1984-87 under its Medical Director, Dr. Fred Fallis. TFO originated with the Toronto General Hospital and the Royal College of Physicians and Surgeons of Canada; subsequently all five medical schools in the province and the Ontario government became closely associated, and now over 200 sites (including most of the hospitals in Ontario) participate. As of March 31st, 1987, TFO has come under the joint management of the Toronto General Hospital, McMaster University and the University of Toronto, and it is intended that it will become self-supporting.

Research development has begun within the CE office. A major project involves improvement of health care based on personal continuing education for health professionals, using an individualized, user-driven system for continuing education. The long-term intention is to provide a widely applicable model for personal continuing education to improve the quality of health care delivery.

A major current direction for the Faculty CE effort is producing a coordinated three year program master plan for continuing education in Toronto.

2.1.7 Division of Studies in Medical Education

The past several years have been exciting and important for the Division of Studies in Medical Education. The Division has been led by Dr. Arthur Rothman (from 1970 to 1984), and since 1984 by Dr. Edward Sellers. During this time characterized by major institutional upheavals (curriculum renewal, hospital mergers), opportunities for educational change have arisen. Concurrently, the Division developed a new mission which was adopted in September 1984, namely, to become the academic focus within our Faculty for research and expertise in undergraduate, graduate, continuing and postgraduate education. Our goal is to achieve this by conducting and coordinating research in medical education, through faculty development and by providing professional advice and consultation with respect to program design, specific courses, course evaluations, student assessment, educational research and Faculty development.

We have been fortunate in recruiting two new full-time faculty members; in addition, a cadre of cross-appointments has been developed by the Division. Because of the increase in the Division's staff, it is now possible to have senior key trained medical educators on each major education committee. A notable development in the past year has been the initiation of substantial collaborations in funding and programming with the Departments of Surgery, Paediatrics and Medicine to enable them to hire medical education specialists.

A number of new projects have been established, including the faculty development program, clinical skills assessment unit, academic program evaluation project, examination and student assessment projects, and computerized curricula data base project.

The Division has increased its research activities and has been successful in obtaining external peer-reviewed grants, as well as competitive intramural funding. Development of an outstanding research program and expansion of the external support of our research activities has high priority.

2.1.8 Division of Teaching Laboratories

This Division provides the facilities, staff and operating services for laboratory teaching in the Faculty. The Division has a director and 25 staff, occupies 57,179 square feet of space, and has a budget of $850,000 per annum. Dr. Anna Sirek served as Director of the Teaching Laboratories from 1976 to 1986; Dr. Larry Spero became Director in 1986.

A recent internal review of this Division was critical of the academic role that laboratory teaching has played. The report recommended that either an academic plan for laboratory and experimental teaching be developed, or that the facilities be modified in their use.

In response to these observations, the mandate of the Director has been changed to include academic responsibilities for laboratory teaching. This has permitted numerous new program developments and planning initiatives to be taken in this area. Through various initiatives in collaboration with departments, a number of major changes in laboratory teaching can be anticipated. For example, an eight station microcomputer laboratory has recently been established.

2.2 RESEARCH

In 1978, a Dean's Office report predicted that "the potential for research support in Canada will continue to grow, while University resources are likely to continue to dwindle. In the absence of overhead support from external granting agencies, difficulties will inevitably grow. Problems related to the provision of research space and shortage of tenure positions will likely continue or become accentuated. Reductions in subsidies for services will compound the strain upon research budgets. Careful planning of both overall and operational policies will become essential if the scientific thrust of the Faculty is to be maintained. If the intention is to increase the Faculty's research effort, then it becomes clear that present mechanisms are simply inadequate."

This was the climate when I took office in 1980. I recognized the need to increase the Faculty's research effort, and to create an environment and culture in which research would be able to flourish, and that the 1980's would present problems for research never before encountered. The technological and knowledge revolution was well under way, unfortunately at a time of serious fiscal problems for Ontario universities.

My first task was to appoint a champion for research — an Associate Dean — and a secretariat to provide back-up administrative support, as well as to provide research administrative services to the research community. Then an organizational structure was created to facilitate, foster and develop research within the existing basic science, clinical and community health sectors, and with the affiliated teaching hospitals. This structure would identify research priorities and set the research direction for the Faculty.

Four Associate Deans have served during the past seven years in research-related portfolios. There have been three senior faculty members who have held the office of Associate Dean — Research; Dr. Keith Dorrington (1981-1982), Dr. Brian Underdown (1982-1984) and Dr. Harvey Anderson (1984-1987). The position of Associate Dean — Neuroscience Development was created for a three year period to facilitate the Faculty's top research priority; Dr. William Tatton has held this position from 1984 to 1987.

2.2.1 Research Administration

Prior to 1981, research administration within the Faculty of Medicine primarily involved processing grant applications and maintaining a small supply of application forms for major granting agencies. In 1981, this service was provided for approximately 400 Faculty members. In 1981, the Faculty Research Office was

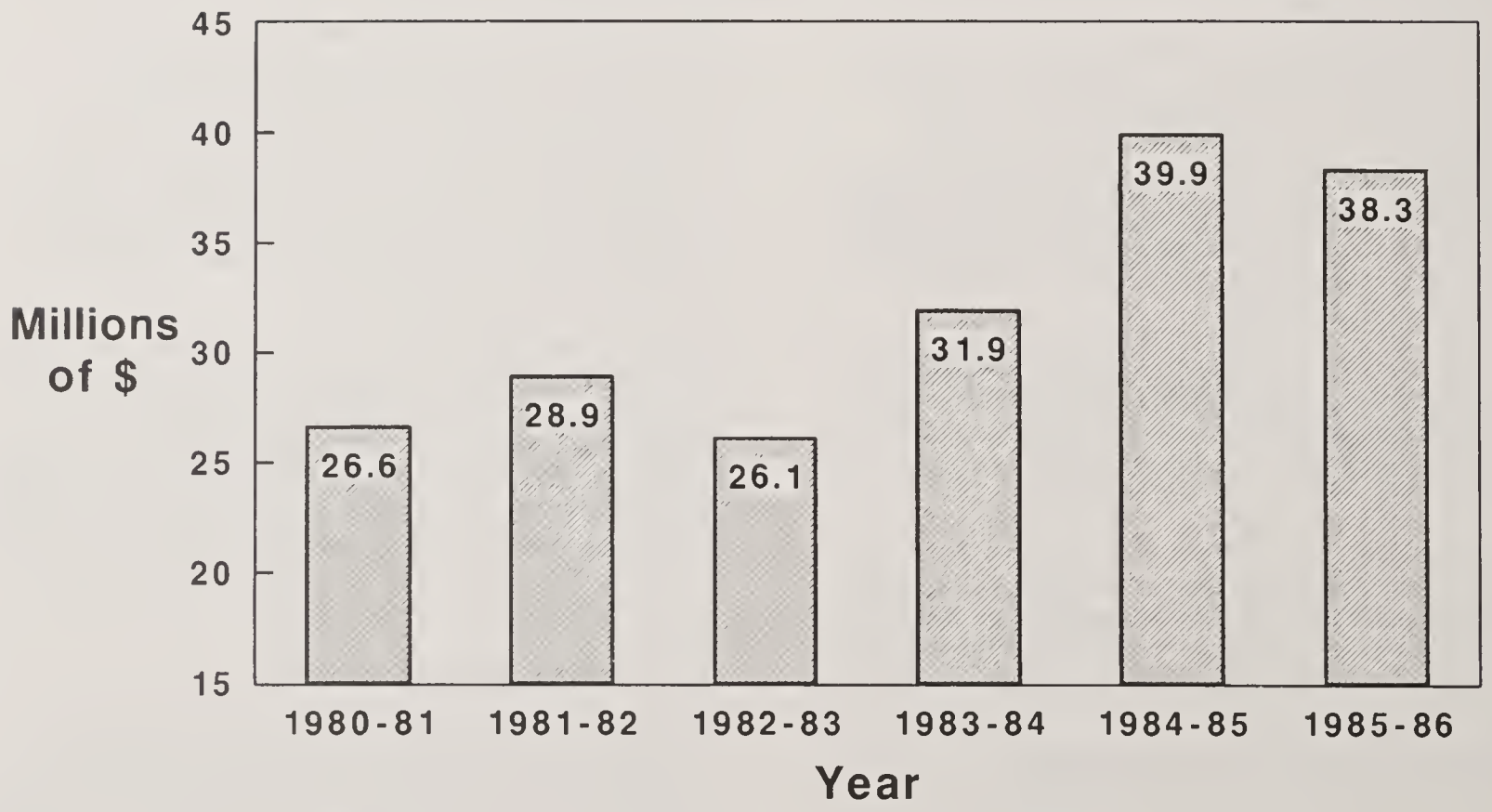
TABLE 8

RESEARCH FUNDING BY SECTOR AND ADMINISTRATIVE SITE
1985 - 1986 (April - March)

SECTOR	U of T Admin. $	Hosp Admin. $	Total $
Basic Sciences	19,238,282	9,213,879	28,452,161
Community Health	3,439,362	598,021	4,037,383
Clinical Sciences	15,592,091	21,452,729	37,044,820
Other Fields	43,610	—	43,610
Grand Totals	**38,313,345**	**31,264,629**	**69,577,974**

FIGURE 5

FACULTY OF MEDICINE
UNIVERSITY-ADMINISTERED RESEARCH FUNDING
1980-1986



formally established concurrent with the creation of the position of Associate Dean — Research.

The Faculty Research Office now provides service to approximately 1,400 Faculty of Medicine investigators on campus and in 15 affiliated hospitals, many postdoctoral fellows and graduate students, as well as another 50 investigators and students in the other health science faculties at the University of Toronto. The research office provided approximately 3,000 agency application forms and guidelines in 1986 to investigators on campus and in the hospitals. Approximately 2,000 applications were signed on behalf of the Dean during 1986. The Research Bulletin is published approximately 10 times per year, with a circulation of 1,335; the bulletin contains information on upcoming agency deadlines and sources of research funding.

An information system on research grants, contracts and awards for the Faculty of Medicine and 11 teaching hospitals is maintained. This system was implemented in July 1984 because the system maintained by the University's Office of Research Administration was not adequate for the Faculty's needs; it is desirable for us to have a complete information system on all of our resources. Our system now permits us to identify investigators according to area of research, disease or keyword.

The Associate Dean — Research has direct academic supervision over certain research groups, units and services of the Faculty (fiscal supervision is provided by the Chief Administrative Officer). These groups are the Division of Laboratory Animal Science, the Division of Medical Computing, the Clinical Science Division, the Bone and Mineral Group, and the Banting and Best Diabetes Centre.

2.2.2 Research Program Planning and Coordination

In 1980, the only vehicles for research program planning were the Committees of Chairmen and the Faculty Research Committee. During the ensuing years, major changes have taken place, with the assistance of the Vice-Provost Health Sciences, Dr. C.H. Hollenberg. The Faculty Research Committee was restructured in terms of purpose and membership to reflect the breadth of the Faculty (including the teaching hospitals) and, under the chairmanship of Dr. G.H. Anderson, became oriented more towards planning of research than operations. The Hospital-University Research Coordinating Committee (HURCC) was established (comprised of the research directors from the teaching hospitals and the Associate Dean — Research as chairman) to provide the main forum for identifying operational issues and solving problems at the institutional interface. The Health Sciences Research Group was created to examine problems and issues of a common nature affecting the Health Science Faculties.

One of the first tasks of the restructured Faculty Research Committee was to identify broad Faculty research development goals. These were developed — in the areas of Neurobiology, Immunology, Developmental and Regulatory Biology, Clinical Epidemiology, and Molecular Biology — and it was recognized that departmental chairmen and hospital research directors should be responsible for developing research and quality control under these broad goals.

The Faculty Research Committee established neuroscience as its top priority for development, given the strong potential and remarkable research opportunities in this area. The appointment of the Associate Dean — Neuroscience Development reflected the Faculty's commitment to this area. Neuroscience initiatives are discussed in a subsequent section.

Although little or no base budget resources could be made available to advance other priority areas, significant progress has been made since these priorities were established. A new Department of Immunology was created and three multi-disciplinary research groups were established: a biotechnology group to study problems in cellular immunology; a science group of cellular immunologists, clinicians and clinician-investigators of a hospital-based rheumatic disease unit and basic scientists of the biotechnology group to study autoimmunity; and an immunology/transplantation group interested in mechanisms underlying graft rejection.

Planning groups are still working on the development of the other priority areas in Clinical Epidemiology, Developmental and Regulatory Biology, and Molecular Biology. These latter two developments are coordinated with the research program plans developed by the Basic Science Chairmen.

2.2.3 Present Research Status

The University of Toronto, with its affiliated hospitals, is fortunate to have the greatest concentration of medical research in Canada. Since 1980, there has been sustained growth. Total funding from all sources, but excluding infrastructure and salary support from base budgets of the institutions, was $69.6 million in 1985-86, the last year for which we have complete statistics. When calculated as a proportion of the medical research funding in Ontario and in Canada, our activity represents 50% and 20% of the total, respectively.

Of the research funding coming to the Faculty of Medicine and its affiliated institutions in 1985-86, approximately $40 million was administered by the University and $30 million by the hospitals (Table 8 summarizes this funding; complete figures are presented in Supplementary Table 1). Growth since 1979-80 in the University-administered component is readily apparent (Figure 5). The apparent decline in 1985-86 compared with 1984-85 is due to devolution of administration to the hospitals where appropriate.

Growth in research funding has occurred in all sectors of the Faculty with the largest occurring in community health departments, which began with the narrowest base, and the smallest in clinical departments. Clearly some departments have been more successful than others. These data provide useful information to committees and reviewers of departmental programs and chairs (see Table 9 for a summary; complete figures are in Supplementary Table 2).

The quality of research funding is also high. In the past three or four years Toronto, compared with all Canadian medical schools, has received the highest average grant-in-aid award from the Medical Research Council (MRC). Despite an alarming decline in the number of MRC fellowships awarded, a higher proportion of MRC postdoctoral fellows complete their research training at Toronto than at any other institution (Table 10). However, we could do better in obtaining MRC personnel support. McGill continues to have 50% more MRC scholars than Toronto, and both the University of Montreal and McGill University obtain MRC studentships equivalent in number to Toronto.

2.2.4 Neuroscience Development

Over the past seven years, there has been a steady acceleration in the level of activity and new developments in the neurosciences within the Faculty of Medicine. This growth is reflected by a number of indices. The most obvious is demonstrated by the fact that there are now 148 Faculty members who are actively involved in neuroscience-related research. These neuroscientists work in

TABLE 9

FACULTY OF MEDICINE UNIVERSITY ADMINISTERED RESEARCH FUNDING BY SECTOR 1980 - 1986

	1980-1981 $	1981-1982 $	1982-1983 $	1983-1984 $	1984-1985 $	1985-1986 $
Basic Sciences	12,102,536	14,548,398	12,890,171	15,720,912	18,573,232	19,238,282
Community Health	1,058,363	680,489	1,400,413	2,629,508	3,292,075	3,439,362
Clinical Sciences	11,916,583	13,020,267	11,148,184	13,202,480	18,041,407	15,592,091
Other	1,541,109	654,127	693,892	320,152	12,040	43,610
TOTAL	**26,618,691**	**28,903,281**	**26,132,660**	**31,873,052**	**39,918,754**	**38,313,345**

TABLE 10

DISTRIBUTION OF MRC FELLOWSHIPS BY PLACE OF TENURE 1980-1986

UNIVERSITY	1980/1	1981/2	1982/3	1983/4	1984/5	1985/6	1986/7
Alberta	9	4	4	4	—	3	3
UBC	12	16	13	11	10	18	9
Calgary	6	3	2	3	3	4	6
Dalhousie	2	6	5	4	—	3	3
Guelph	13	13	12	9	7	9	5
Laval	7	5	4	2	2	3	1
Manitoba	14	14	13	8	8	11	7
McGill	40	34	34	26	11	29	13
McMaster	5	9	10	9	6	13	2
Memorial	1	2	—	—	—	—	—
Montreal	16	13	12	16	11	11	10
Ottawa	3	4	11	3	2	5	1
Queen's	3	5	6	4	1	2	3
Saskatchewan	5	3	6	5	1	4	—
Sherbrooke	3	3	2	1	3	2	1
Toronto	**62**	**61**	**72**	**58**	**30**	**66**	**33**
Western	8	10	8	6	4	8	4
Other	137	123	120	94	79	165	109
TOTAL	**346**	**328**	**334**	**263**	**178**	**356**	**210**

some thirteen settings in the Health Science Complex, and hold primary appointments in a total of 17 different departments and institutes. The extremely wide extent and multi-disciplinary structure of modern neuroscience is emphasized by the fact that seven departmental chairmen are neuroscientists, and six of the Associate and Assistant Deans are from neuroscience-related backgrounds.

Yet, the relative prominence and accelerated growth of neuroscience in the Faculty is in keeping with the increasing incidence of neuroscience-related diseases and their extremely high cost to society. Despite our impressive recent growth, examination of neuroscience activity across the continent reveals that Toronto continues to lag behind most comparable academic centres in terms of neuroscience development. Therefore, in order to begin to participate effectively in the current neuroscience renaissance, the Faculty of Medicine has attempted over the last three years to develop new structures and programs that will serve to focus and coordinate our widely distributed neuroscience efforts.

The Faculty's special efforts in this regard have grown out of a number of reviews of neuroscience, largely undertaken during the past seven years. These reviews are listed in Table 11. These review and planning processes, related to the neurosciences, have drawn attention to a number of major appointments that have served to increase the prominence of our neuroscientists. These appointments partially reflect the designation of neurosciences as the major academic development priority in 1983. As part of this priorization, the Toronto Western Hospital was named as the clinical centre for neurosciences within the Toronto teaching hospital system, and joint planning was undertaken by that hospital and the Faculty of Medicine. Dr. William Tatton was appointed Associate Dean — Neuroscience Development in 1984 for a three year term; his concurrent appointment as Vice President — Research at the Toronto Western Hospital facilitated the joint planning between the Hospital and the University.

The Associate Dean was given three mandates for neuroscience development. First was the creation of special facilities. Second was the establishment of multi-disciplinary programs. The third mandate was to explore new organizational structures for neuroscience teaching and research.

Neuroscience Planning Mechanisms

In order to promote coordinated planning, particularly in the development of programs that will interface with the Faculty's fundamental and clinical neuroscience research, a Steering and Priorities Committee was established in 1985. It was chaired by the Associate Dean — Neuroscience Development, and involved twelve departmental chairmen/divisional directors. The committee considered presentations related to a number of programs that would span fundamental and clinical research, and accorded the highest priorities to research related to brain development/ regeneration and neurodegenerative disorders. The committee's work facilitated the development of several neuroscience initiatives, which are described subsequently.

Magnetic Resonance Imaging

The Toronto Hospital and the University jointly developed a Magnetic Resonance (MR) research facility suitable for animal research at the Toronto Western Hospital; it was officially opened by the President of the University and the Chairman of the Hospital Board in January of 1986. This MR facility is largely involved in research activities aimed at carrying out spectroscopy and other magnetic measurements from within defined subvolumes of organ systems. The total cost of establishing the facility has been shared almost equally among three sources:

- seed funds from the Faculty of Medicine;
- construction and laboratory development funds from the Toronto Western Hospital; and
- a loan from the central University administration, which is being recovered from users over a four-year period.

Critical to the development of this facility has been the participation of a group from the Faculty of Arts and Science led by Dean Robin Armstrong. The facility is principally operated by members from the Departments of Radiology, Physics and Chemistry, the Institute of Biomedical Engineering and the Playfair Neuroscience Unit, together with representatives from a number of other departments within the Faculty of Medicine. Almost $300,000 in external funds has been attracted to support over ten different research projects presently underway in the MR facility. Eleven trainees, spanning almost an equal number of departments in the Faculties of Medicine, Arts and Science and Applied Science and Engineering are presently making use of this facility. Researchers from the Medical Sciences Building, the Toronto General Hospital and the Hospital for Sick Children are involved in research activities within the facility. The facility at the Toronto Western Hospital is designed to complement the magnetic resonance facility for spectroscopy located at the Medical Sciences Building, and another facility devoted to imaging research at the Princess Margaret Hospital. This type of shared facility is likely to be a prototype for other high cost neuroscience-related facilities in the Faculty.

As an outgrowth of the deliberations of the Steering and Priorities Committee and the previous review processes, a Dean's Committee, also chaired by Dr. W. Tatton, was appointed in the Fall of 1986 to begin planning for clinical neuroscience developments within the Faculty. The Committee's report, submitted in February 1987, concluded that clinical neuroscience development should proceed incrementally, with the initial creation of a Department of Neurology which would serve as the nexus for expanded developments involving other neuroscience-related clinical disciplines (including neurosurgery, neuropathology, neuroradiology, neurorehabilitation, and neurologically-related psychiatry). The Committee emphasized the view that such a department should involve a strong fundamental research component, incorporating a variety of disciplines in order to provide an essential substrate for disease mechanism-oriented research.

The Committee's proposal was reviewed, and it is my firm belief that a Department of Clinical Neurological Sciences should be established, which would include Neurology, the Playfair Neuroscience Unit and the new Centre for Neurodegenerative Diseases Research.

Positron Emission Tomography (PET)

One of the most significant achievements is the award of $7.5 million by the Ontario Ministry of Health in April 1987 for the development of a Positron Emission Tomography Imaging Facility to be located at the Clarke Institute of Psychiatry. This is the result of a 12 year long effort by Dr. Philip Seeman and more recently by the determined efforts of Dr. Vivian Rakoff and Dr. William Tatton.

Centre for Neurodegenerative Diseases Research

The priority accorded the neurodegenerative disorders is being realized by the emergence of an opportunity to create a Centre for Neurodegenerative Diseases Research within the University. A major donor, Mr. Mark Tanz, has committed funds that will provide approximately 40% of the monies necessary to create and operate this Neurodegenerative Diseases Research Centre, to be

TABLE 11

NEUROSCIENCE REVIEWS
1980 - 1986

1980	-	Review of the Division of Neurology
1981	-	Review of the Playfair Neuroscience Unit
1982	-	Creation of a Special Dean's Task Force on the Future of Neurosciences
1983/ 1984	-	Dean's Ways and Means Committee for an Institute of Neuroscience
1984	-	Establishment of the Neuroscience Steering and Priorities Committee
1986	-	Establishment of the Neurobiology Planning Group
1986	-	External Review of the Playfair Neuroscience Unit
1986	-	Dean's Committee for the Creation of a Department of Clinical Neurological Sciences

located in the present Botany Building immediately adjacent to the Medical Sciences Building. It is to be hoped that the Centre will amplify developments undertaken at the Toronto Western Hospital, and will provide a vital link between the concentration of fundamental neuroscience activities within the Medical Sciences Building and the teaching hospitals. An Advisory Committee for the Centre has been appointed, together with an Acting Director (Dr. D.R. McLachlan), and a major fund raising effort is underway under the aegis of President Connell and the central University administration. A director of international stature will be recruited. He/she will draw from the existing core of dedicated brain scientists at the University to combine their efforts with those of a group of new investigators to form a powerful multi-disciplinary team. This combination of talents will provide the "critical mass" necessary for making important breakthroughs in this field over the next decade.

Other Neuroscience Initiatives

Part of the excitement related to overall neuroscience development has grown out of the active neuroscience seminar program which, over the last four years, has brought outstanding individuals from around the world to speak at the University of Toronto. A joint neuroscience seminar series with the Faculty of Arts and Science and other faculties is planned for 1987/1988, and will involve lectures by Nobel Prize winners in the neurosciences. A third decentralized venue for disseminating neuroscience information includes the seminars relating to the Department of Otolaryngology's vestibular program and the Playfair Neuroscience seminar series.

Due largely to the efforts of Dr. B. Roots of the Department of Zoology and Associate Dean A. Melcher of the School of Graduate Studies, a cross-university program in neuroscience graduate training has been undertaken. Students will now be able to take a degree in a variety of disciplines with a neuroscience specialty at the University of Toronto. Dr. T. Petit will coordinate this program. The program is administered by a committee involving the chairmen of all the participating departments within the Faculties of Medicine and Arts and Science.

Members of the Faculty of Medicine neuroscience community have contributed to a process, sponsored by the Ontario University Committee for Health Research (OUCHR), which identified neurosciences as an Ontario priority for University development and parallels activities within our Faculty. The OUCHR process will assist in focussing programs at individual university centres, and in developing mechanisms for coordinating neuroscience activities in a wide variety of universities, faculties, departments, and other institutions across the province.

The major organizational challenge which the Faculty will continue to face is to convert our widespread activity into a coordinated effort (within and outside of our University). Given the strong steps that have been taken over the last few years, particularly those which have committed resources to interdisciplinary efforts, the Faculty of Medicine has the potential to assume a world-leading role in academic neurosciences during the 1990's.

2.2.5 Other Research Initiatives

The last seven years have witnessed considerable growth in research activity within our Faculty. The large increase in hospital-based research programs, research dollars and research projects have, not surprisingly, led to an impressive list of major discoveries and accomplishments. Similarly, there has been a significant rise in the number of initiatives undertaken by department chairmen, research program leaders and individual investigators. Only some of these can be described here, given space limitations; the following are examples of the diversity of effort.

Eye Research Institute of Ontario

Following many years of organizational planning and fund-raising by senior members of the Department of Ophthalmology (particularly Dr. W. Callahan and Dr. C. Mortimer), the Eye Research Institute of Ontario was established in 1986. The Institute will be operated by an independent Board of Directors. The Dean of the Faculty of Medicine, the Chairman of the Department of Ophthalmology and two representatives of the Toronto Hospital will sit on this Board. In April 1987, the Ontario Ministry of Health approved a research grant for $4.5 million to the University of Toronto towards the costs of construction and outfitting of space at the Toronto Western Hospital, adjacent to the clinical facilities of the combined Toronto Hospital Department of Ophthalmolgy.

McLaughlin Scientists Program

At the end of the 1970's many of the Toronto teaching hospitals, keen to contribute to the revolution in scientific knowledge, started planning new research space and an expansion of fund-raising efforts to support the new research operations. It was clear that here was a unique opportunity to create multi-disciplinary programs with strong partnerships between the University and the teaching hospitals. The McLaughlin Foundation recognized the importance of this opportunity and in August 1984 awarded the University of Toronto a gift of $1 million. This allowed the Faculty of Medicine to create new basic science positions in four of the Toronto teaching hospitals in the areas of genetics and molecular biology, cell growth and development and immunology. With matching funds from each of the Toronto General Hospital, Toronto Western Hospital, Hospital for Sick Children and Mount Sinai Hospital, and following extensive searches, three McLaughlin Scientists and two McLaughlin Scholars were appointed with primary appointments in the Departments of Immunology, Obstetrics and Gynaecology and Medical Biophysics.

Membrane Biology Group

During the last decade the study of cell membranes has become one of the major research themes of modern medical science. In 1982, with the combined support of my own discretionary funds, the Banting and Best Diabetes Centre and the Department of Medicine, Dr. M. Silverman was given a mandate to recruit a small team of researchers in the field of Membrane Biology, based in the Department of Medicine. Over the succeeding three to four years this has emerged as a Canadian team with significant international stature. As of 1986, the team consisted of five independent investigators whose research thrusts are highly integrated and at the most advanced frontier of membrane research. A major strength of the group is the simultaneous presence of Ph.D. and clinician scientists, empiricists and theoreticians, functional (physiologic) and structural (chemical) approaches, all in the same working environment. In June 1987, the Membrane Biology Group was awarded an MRC Group grant in the amount of $3.5 million over six years.

Immunology

The recent revolution in molecular biology has led to enormous advances in our understanding of biological processes at the molecular level. A major portion of this work has been based on studies of the immune system. I recognized that, in order for the University of Toronto to maintain its reputation for excellence, a priority should be the establishment of an organizational structure to harness efforts in this area. Thus, in July 1984, a new

Department of Immunology was created, with Dr. Richard Miller as its first chairman and with the primary objective of promoting and facilitating research in immunology throughout the entire Faculty. Furthermore, Immunology was identified by the Faculty Research Committee in 1985 as one of five research priorities and three main foci were recommended for development, as mentioned previously.

2.2.6 Research Issues

One of the most important issues confronted by the Faculty and the teaching hospitals in 1980 was the extent to which research in the three sectors of the Faculty (basic, clinical and community health) is coordinated with that in the teaching hospitals. While progress has been slow, the efforts of the Faculty Research Committee to identify priorities have integrated some major research programs on campus and in hospitals. The grant from the McLaughlin Foundation created foci at four of the teaching hospitals with strong links to the basic science departments. Guidelines have been established regarding the joint appointment of Faculty between the research institutes and the University. The Hospital-University Research Coordinating Committee has been most effective in examining problems and issues relating to the research infrastructure.

Commercialization of Research in the Faculty of Medicine

There are many ideas and/or projects in the research laboratories of the Faculty of Medicine which have commercial potential. Some of these have been successfully processed through the University's Innovations Foundation. Some investigators with an entrepreneurial bent have taken the initiative to develop them on their own, either by setting up their own companies or by making arrangements with a private industry.

In 1986, the Federal Government announced that it was prepared to contribute significantly to established research funding programs by matching on a dollar-for-dollar basis incremental private sector contributions to the federal granting councils. This initiative stimulated the Faculty Research Committee to examine more closely the potential for commercial development of research in the Faculty, and to establish a sub-committee (under the chairmanship of Dr. M.J. Hollenberg) for developing principles and procedures to involve the private sector in University research. The outcome was a proposal to develop a partnership between the University, the Innovations Foundation and the Toronto Hospital, with the ultimate aim of involving all Toronto teaching hospitals. This will allow sufficient funding to market research with commercial potential.

Factors Which Inhibit the Achievements of Full Research Potential

In general, there is insufficient research funding from provincial and federal sources. In 1985-86, Canadian Faculties of Medicine received approximately $368 million from the Federal and Provincial governments, national and provincial charitable agencies, private industry, and other miscellaneous sources. About one-third of this total came from the Medical Research Council. This national research funding figure continues to lag well behind that of national research funding in most industrial nations including the U.S.A. where it is estimated that funding for medical research is approximately three times per capita greater than that in Canada.

Specifically, the lack of funds for equipment replacement and the purchase of up-to-date technology are acute problems. The inability to form large, focussed groups because of insufficient operating funds is of concern. There are several current examples of this problem: progress is impeded in the development of large groups in protein engineering, membrane biology, neurobiology, immunology and others. It is only with the ingenuity of the "product champions" that these areas are moving ahead.

Further difficulties lie in the problems of attracting new, young researchers to support the infrastructure required to encourage research activity. The impact of successive budget reductions has forced investigators to rely on research grants for services which have either been subsidized by the Faculty in the past or were provided through departmental budgets. Equipment has deteriorated or become obsolete to such a degree that a major transfusion of capital is required to return to an acceptable standard of excellence. There are several dramatic cases where the Faculty has lost or failed to attract promising scientists because it could not match the offers made by other centres.

Although the Federal and Provincial Governments have established new programs to increase research funding, the emphasis is less on basic research and more on research with economic potential. In August 1986, the Federal Government froze the budgets of the granting councils and established the "Matching Program", where contributions by the private sector would be watched up to a maximum of six percent per annum. Both the private sector and the universities are skeptical that sufficient funds will be provided by the private sector. The fundamental problem is a shortage of industries willing to invest in research and development. In 1986, the Ontario Government established a $100 billion technology fund to be spent over 10 years to stimulate the Ontario economy. A significant portion of these funds will be dedicated to building "Centres for Excellence" with participation by Ontario universities. However, it is unlikely that more than one centre will be devoted to a health-related problem. Thus, the funding of basic research continues to be a serious problem.

Use of Animals in Research

During the past few years, animal rights groups in Canada have increased in strength and number and have managed to obtain a significant amount of public sympathy. The activities of these groups present a major threat to research using animals and could bring a large proportion of research projects in this Faculty to a grinding halt. The animal rights groups focussed on research using pound animals (cats and dogs) as their first line of attack, and a bill to restrict the use of pound animals was introduced into the Ontario Legislature in 1986. Experience in the U.S.A. indicates that if the pound issue is won, the activists will go after the use of rabbits, guinea pigs and, ultimately, rats and mice.

The Faculty of Medicine has been instrumental in organizing a counter-attack against the Canadian animal rights groups. Through the Association of Canadian Medical Colleges (ACMC), it was possible to convince the 16 Canadian medical schools to contribute financially to a central fund administered by Canadians for Health Research, primarily to run a national media relations campaign on the need and benefits of animals in research.

Development of the Hospital Research Institutes

One of the most important developments for the University over the past seven years has been the growth of research programs within the 11 fully affiliated teaching hospitals. In 1980, planning for the creation of several research institutes was well under way, notably at the Toronto General Hospital and Mount Sinai Hospital, and it was clear that structures would need to be put in place to prevent duplication of programs and facilities.

In 1981, the Hospital-University Research Coordinating Committee was created comprising the research directors of the 11 affiliated teaching hospitals, and chaired by the Associate Dean — Research. Its objectives are to exchange information with respect to aspects of research planning, to examine problems and issues of common concern, and to develop policies which would advance the overall research endeavour.

In 1980 there were four hospitals in Toronto which had special research mandates: the Hospital for Sick Children, Addiction Research Foundation, Clarke Institute of Psychiatry, and Princess Margaret Hospital. By 1987, Mount Sinai Hospital, Sunnybrook Medical Centre, Toronto Western Hospital and Wellesley Hospital had research institutes, and Toronto General Hospital and St. Michael's Hospital had expanded their research programs many fold. It is estimated that, since 1980, the amount of research space in the affiliated teaching hospitals has tripled, and the amount of research funding has almost doubled from $22.5 million to $41.5 million.

Inter-institutional planning has been difficult, particularly since each of the institutions involved has unique loyalties and often specific community groups which are the heart of successful fund-raising campaigns for research. Although this growth was seen initially by some Faculty members as deleterious to the future of the Faculty (particularly by those in the MSB-based basic science departments), we recognize that the progress in the teaching hospitals has enhanced the quality of research in the Faculty and will continue to do so in the future.

As there are many basic scientists in the clinical departments and in the hospital research institutes, attempts are being made to strengthen the links among the basic science departments, the clinical departments and the research institutes. A recent document on appointment of basic scientists to clinical departments and to hospital research institutes will help us to facilitate these linkages.

The Hospital-University Research Coordinating Committee (HURCC) has played a key role in research program planning. Working together, the hospital and campus-based research leaders recognized that there may be a need to trade local priorities for the general good of the overall research enterprise. It was in this spirit that the following informal agreement was reached: Mount Sinai Hospital would be a centre for developmental biology; Toronto Western would preferentially develop neuroscience and immunology; Toronto General would develop reproductive biology, nutrition and cancer research programs; and the Hospital for Sick Children would expand its childhood cancer and genetics programs. In addition, it became clear that Sunnybrook Medical Centre would become a centre for aging research, rehabilitation and clinical epidemiology, and the Wellesley Hospital would develop major programs in immunology, rheumatic diseases and clinical epidemiology.

HURCC also saw an opportunity to bring to the table many issues of common concern to all research institutions. Agreement was reached on a policy of joint appointment of hospital-based scientists. Agreement was also reached on employing uniform standards with respect to ethics committees. There has been good cooperation on the development of a central information system on research grants administered out of the Faculty Research Office, although there are still some organizational problems to be worked out. There is a general consensus on the approach to be taken with respect to defending the use of animals in research, although there are some differences of opinion. In summary, while there will likely continue to be some disagreements, the experience of the past six years has proven that there is a tremendous amount of goodwill.

2.3 FACULTY ORGANIZATION AND OPERATIONS

2.3.1 Organization

Given the size and complexity of the Faculty of Medicine, organization and administration always present formidable challenges. At present, we are organized in a matrix within which programs and operations interact. There are four operational sectors: three of these encompass the academic departments in the basic science, clinical and institutional affairs, and community health portfolios, and the fourth is service-oriented. The three academic sectors are organized under associate deans, who are responsible for budget, personnel and other administrative matters. The fourth sector consists of the service divisions which support faculty functions; these divisions report to the chief administrative officer.

This vast Faculty of Medicine includes 27 departments, two institutes, five administrative divisions and a number of research units. Three committees of chairmen (and associated directors) meet on a monthly basis to discuss issues applicable to each sector. Issues brought to these committees fall into two broad categories — those of relevance to that sector only and those which require input from all areas of the Faculty prior to a decanal decision. The majority of the discussions at the committees of chairmen focus on appointments/positions, budget and new program submissions. A complete list of chairmen and directors who have served in the past seven years is presented in the Appendix.

Faculty Council

The formal organization of the Faculty is set out in a constitution and bylaws. The Faculty Council is the highest level of organization, and is chaired by a speaker who is appointed annually. Dr. Peter Alberti has been the Speaker since 1982 and Dr. George Beaton the Deputy Speaker; Dr. James Thompson was the previous Speaker. The Speaker is supported in his duties by the Faculty Secretary, Miss Fran Morris. The Council of the Faculty has the power to discuss any issue related to education, research and resources. It advises the Dean, departmental chairmen, and members of Faculty on such issues, and is ultimately responsible for educational programs within the Faculty (except for those under the control of the School of Graduate Studies), and for research policy and its implications. Council is supported by a number of standing committees which assist in policy formulation and in executive decisions in certain areas. These committees are described in the Faculty bylaws.

Topics are referred to Faculty Council, after consideration by the committees of chairmen and the Deans, either for decision-making or for information. As well, topics can be raised directly at Faculty Council if public discussion of an issue is requested.

The constitution of Council allows for periodic review and revision of the constitution. In 1985, a committee chaired by Dr. George Beaton presented proposed revisions to the constitution and bylaws. These were accepted, and a revised constitution has been adopted.

The Process of Review

The Faculty is involved in a continuous process of appraisal by both internal and external reviewers. The various appraisals include:

- annual departmental review;
- external departmental review every five years;

EXHIBIT 2

MAJOR PLANNING ACTIVITIES 1980 - 1987

- Establishment of the Department of Microbiology
- Task Force on Faculty/University Relations
- Task Force on University-Teaching Hospital Relations
- Task Force on Faculty Development
- Cardiovascular Surgery Task Force
- Task Force on Trauma
- Undergraduate Medical Curriculum Committee Report on Curriculum Renewal
- Establishment of the Department of Immunology
- Task Force on Speech Pathology
- Task Force on the Future of Neurosciences
- Ways and Means Committee for a Neurosciences Institute
- Committee on Magnetic Resonance Imaging
- Allocation of the Extracorporeal Shock Wave Lithotripsy Unit
- Task Force on Student Stress
- Teaching Laboratories Review Committee
- Centre for Communication Disorders Review Committee
- Review of the Health Care Research Unit
- Task Force on Oncology
- Review of Allocation of Neurosurgery Residents to Wellesley Hospital
- Clinical Epidemiology Task Forces
- Radiation Oncology Working Committee
- Bone and Mineral Group Review
- Task Force on Scientific and Technical Services
- Art as Applied to Medicine Reviews
- University Planning Committees re: Toronto General/Toronto Western Hospitals Merger
- Task Force on Geriatrics and Gerontology
- Task Force on Review of Admissions Policies and Procedures
- Geriatrics and Gerontology Ways and Means Committee
- Department of Clinical Neurological Sciences Ad Hoc Committee
- Task Force to Review Division of Community Health
- Joint University - Hospital Planning Committee
- Dean's Strategic Planning Committee

EXHIBIT 3

EXTERNAL REVIEWS 1980 - 1987

	DEPARTMENT/INSTITUTE	NON-DEPARTMENTAL UNIT
1980	Community Health	
1981	Otolaryngology Rehabilitation Medicine Surgery	
1982	Behavioural Science Biochemistry Institute of Biomedical Engineering	Speech Pathology
1983	Radiology	
1984	Anatomy Art as Applied to Medicine Pathology	Division of Studies in Medical Education Hannah Chair
1985	Banting and Best Department of Medical Research Medicine Nutritional Sciences Paediatrics Preventive Medicine and Biostatistics Psychiatry	Bone and Mineral Metabolism Unit Canadian Liver Foundation Epidemiology Unit
1986	Medical Biophysics Medical Genetics Pharmacology Physiology Anaesthesia Clinical Biochemistry	Banting and Best Diabetes Centre Occupational and Environmental Health Unit Playfair Neuroscience Unit
1987	Family and Community Medicine Obstetrics and Gynaecology Ophthalmology Otolaryngology Surgery Behavioural Science Microbiology Health Administration	

- Ontario Council of Graduate Studies (OCGS) review of graduate programs;
- accreditation of the undergraduate medical program by the Liaison Committee on Medical Education/Committee on Accreditation of Canadian Medical Schools (LCME/CACMS);
- reviews of postgraduate residency training programs by the Royal College of Physicians and Surgeons (RCPS), and the program in Family and Community Medicine by the College of Family Physicians of Ontario (CFPO);
- accreditation of the graduate program in Health Administration by the Association of University Programs in Health Administration (AUPHA); and
- review of continuing education programs.

The appraisals and reviews form an important component of Faculty planning. In addition, special task forces, committees or other groups are established to address planning issues which could have a substantial impact on the Faculty. Since 1980, there have been over 30 major planning groups which have had a substantial impact on Faculty activities. These are listed in Exhibit 2.

Departmental review at this University is prescribed by the Haist Rules. Its purpose is to either evaluate the performance of a department at the conclusion of the chairman's first five year term, or to provide advice for a search committee for a new chairman at the conclusion of two terms. External departmental review has developed within the Faculty of Medicine as a means of providing input to long-range planning and assessment of activities, and has now been adopted by.the entire University.

The primary emphasis of the external review is to assess the quality of departments, their programs and operations, highlighting strengths and weaknesses, relevance of objectives, programs and research directions, and adequacy of resources. By bringing in external reviewers, it is possible to gain perspective and objectivity which could not be achieved by Faculty members. As well, the reviewers can offer an opinion on how a department stands in relevant national and international contexts, particularly when compared to departments in medical schools of similar size and in similar settings.

Until 1984, external reviews in the Faculty generally were conducted only when a chairman was stepping down. If there were no obvious difficulties in a department at the end of his/her first term, he/she would be reappointed for a second term with a mandate defined by the Dean and sector associate dean, but a review was not conducted. However, because of the importance of the self-appraisal that goes on in preparation for a review, as well as the objective perspective of external reviewers, I decided to institute a formal external review at the end of the chairman's first five-year term. If the chairman wishes to stand for a second term, and there are no major criticisms in the review, the work of the search committee can be minimal. However, if problems are identified, the committee has the opportunity for further investigation and can offer guidance on an appropriate course of action. In this way, a thorough review of each department is conducted at five-year intervals. A list of reviews conducted during the past seven years is presented in Exhibit 3.

LCME/CACMS Accreditation

The Faculty was surveyed in March 1983 (the previous survey was in 1977). The four person survey team consisted of one American medical school dean (the chairman), two Canadian deans, and one assistant director of continuing medical education at a Canadian medical school. Prior to the survey, the Faculty conducted a self-study during 1982 to prepare for the review.

The team highlighted a number of areas of strength and some areas of concern were identified. With respect to the latter, they requested that we provide progress reports in April 1985 and April 1987 on the following items:

- progress of curriculum review and revision;
- implementation of the recommendations of the Task Force on Student Stress;
- financial status of the Faculty in the face of University budget cuts;
- further development and implementation of clinical practice plan status; and
- integration of the hospital-based research institutes into the academic program.

The survey team recommended full accreditation for "a long period of time." The LCME/CACMS determined that this should be for the maximum period of seven years. Progress reports were submitted as required and accepted. The next accreditation survey will take place in 1989-1990.

Communications

At present, the Faculty can boast five publications which reach audiences of academic and administrative staff; undergraduate, graduate and postgraduate students; and alumni. Eight issues of *TABLET* have now been published; this quarterly tabloid is produced by the Dean's Office in conjunction with Instructional Media Services. It is distributed to over 20,000 staff, students and alumni, and includes stories on departments, new discoveries, recent events, items of historical interest, and a "talk" section which highlights recent accomplishments by members of the Faculty "family."

Health News is now completing its fifth year of publication. The goal of this publication is to interpret timely health information for the intelligent lay public. It is published six times per year, currently has a circulation of over 3,000 and has received much praise.

As mentioned elsewhere, we also publish the *Education Bulletin*, the *Research Bulletin*, and the *Continuing Education Newsletter.*

Finally, in 1984, I prepared a *Midterm Report* which was circulated to faculty, staff and selected members of the University and teaching hospital system. As with this *End of Term Report*, it provided an overview of the Faculty's activities and has served as a valuable reference document.

These attempts at communication notwithstanding, liaison and information-sharing in this large and geographically dispersed Faculty remain (and always will remain) a problem.

Alumni Relations

Graduates of the Faculty, because of the diversity of its programs, belong to eight alumni associations. These are listed, with current membership, in Exhibit 4. Over the past three years, the Dean's Office has made increased efforts to indicate to the alumni that the Faculty wishes to cultivate alumni/Faculty relationships. This has been pursued through a variety of efforts. I have hosted gatherings of the alumni association presidents and members of the Dean's Office to discuss how better relations can be developed. As a result of these meetings, needs in the area of continuing education were identified, and alumni representatives to the *TABLET* editorial board were selected.

EXHIBIT 4

FACULTY OF MEDICINE ALUMNI ASSOCIATIONS

Association	Current Membership (Approximate)
Art as Applied to Medicine Alumni Association	140
Community Health Alumni Association	2,200
Household Food Science and Nutrition Alumni Assoc.	970
Medical Alumni Association	9,650
Physical and Occupational Therapy Alumni Assoc.	4,100
Society of Graduates in Health Administration	650
Speech Pathology Alumni Association	300
Surgical Alumni Association	1,000
Total	**19,010**

Several of the associations are experiencing a revitalization, and are pursuing more vigorous fund-raising campaigns. In 1985, the Society of Graduates in Health Administration provided funds for a computer laboratory (with 8 microcomputer terminals) for graduate students in health administration. The Physical and Occupational Therapy Alumni Association raised funds to make the building where its programs are housed (256 McCaul Street) wheelchair-accessible. During the past two years, the Medical Alumni conducted their most successful fund-raising campaigns ever through annual phone-a-thons and direct mail approaches to graduates.

The Faculty always has valued the contribution of the alumni, but we must continue to make more concerted efforts to encourage graduates to support its endeavours after they leave the University of Toronto. Discussions are ongoing regarding new efforts to involve alumni more actively in ongoing Faculty operations, including setting up a special office for this purpose, funded jointly by the Faculty and the alumni.

Student Organizations

A number of student organizations function within the Faculty of Medicine in relation to each of the academic programs. These organizations play an impórtant role in terms of organization of student activities, and provide forums for Faculty-student interaction.

The student groups include:

- Medical Society;
- physiotherapy and occupational therapy student societies;
- community health students association;
- art as applied to medicine students association;
- Graduate Students of the Faculty of Medicine (GOFOM); and
- speech pathology student society.

As well, interns and residents belong to the Professional Association of Interns and Residents of Ontario and the Canadian Association of Interns and Residents, which act on behalf of their members in a number of training and personal issues.

The student groups are important to the Faculty. They are represented at Faculty Council, and participate in academic planning through a variety of committees. Members of the student groups have joined the editorial board of *TABLET* in an effort to ensure that students are involved and represented in this publication.

International Activities

I believe that a heightened international profile is desirable and is associated with international obligations of established universities. Since 1980, there has been a major expansion in the Faculty's international contacts. With the resumption of the relationship between the University of Toronto and China, which dates to 1910, formal agreements have been concluded with the West China University of Medical Sciences in Chengdu, Sichuan; between the Toronto General Hospital and the Beijing Hospital; and between the Clarke Institute of Psychiatry and the Shanghai Mental Health Centre. In addition, there is a growing relationship of the Faculty with the Chinese Academy of Medical Sciences and the Beijing Union University (formerly the Capital Medical School). There have been annual exchanges of professors and we currently have some 150 physicians and scientists studying in Toronto from the People's Republic of China, in both degree and non-degree programs. Professor John Browne of the Department of Health Administration coordinates our "China desk"; all other international work which requires Faculty administration is the responsibility of Ms. Sherril Gelmon in the Planning Directorate.

Other major international contacts developed in recent years are in the Middle East (Israel, Oman, Saudi Arabia and the United Arab Emirates), Thailand, Mexico and South America (Colombia and Uruguay). There has been a substantial increase in the number of visiting professors (both physicians and basic scientists) who have taken sabbaticals and periods of study in our Faculty, reflecting the large international profile of many of our professors. Clinical teachers are granted temporary licenses by the College of Physicians and Surgeons of Ontario to enable them to have patient contact as they study and work in our teaching hospitals and laboratories. As well, members of our Faculty (too numerous to mention) have taken sabbaticals overseas to pursue particular areas of study.

In conjunction with the University Office of International Cooperation, a data base is being developed which will provide an inventory of faculty members' roles in international work. This inventory will enable us to identify faculty with particular areas of expertise or locales of experience, and will aid us in responding to development of new international initiatives.

Relationships between the Faculty/University and agencies providing funding for international projects (Canadian International Development Agency, International Development Research Centre, Rockefeller Foundation) have been strengthened in the past few years. We have been successful in receiving funding for both collaborative research projects (here and overseas) and for training programs in Toronto. The IDRC and Rockefeller have jointly supported a three month training program in health care evaluation and management skills for senior physician administrators in developing countries for two years; this project is directed by Dr. M. Fanning and Dr. C. Bombardier.

2.3.2 Basic Science Sector

The basic sciences portfolio has been filled by three associate deans during my deanship, Dr. Keith J. Dorrington (1980-81), Dr. Donald W. Clarke (1981-84) and Dr. Keith L. Moore (since 1984). The greatest challenge facing our ten basic science departments during my term as Dean has been to capitalize on important areas of overlap in terms of research methodology, areas of mutual interest and joint courses. We have ten basic science departments which reflect the traditional disciplines. Recent developments in science, particularly in the area of molecular biology, have made many of these departmental distinctions anachronistic. Therefore, we have attempted to both maintain the traditional organization and recognize new scientific realities.

One of the major and controversial initiatives in this area has been the development of interdepartmental planning and budgeting amongst the basic science departments under the strong leadership of Dr. K.L. Moore. Formal divisional planning became essential when the Faculty's tenure pool was eliminated in 1982. To make the best use of limited resources, the basic science chairmen agreed in 1984 to develop interdepartmental plans for making new academic appointments, and for strengthening research and teaching activities in their departments.

The chairmen have come to believe that coordinated interdepartmental planning is essential in order to achieve maximal benefits without inadvertent duplication. It was agreed that future recruitment should aim to attract the best possible scientists for the available positions and space. These individuals, in addition to developing their own research in an interdisciplinary program, must be willing to participate in other Faculty programs, particularly those in undergraduate and graduate teaching.

The nature and complexity of modern research favours the interdisciplinary approach for solving many health-related problems. With this in mind, the basic science chairmen have agreed to attempt to provide an academic environment in which groups of individuals interested in certain areas of research, but often from different points of view or through different technologies, can interact. The formation of interdisciplinary programs is expected to increase research collaboration that will cross departmental barriers, and to provide high profile research thrusts that will attract funding from a variety of sources.

For the purposes of general planning, several areas for research development have been defined. These areas reflect current developments in basic science research in the Faculty and ones that show clear promise of future research advances. Gaps are being identified in these areas and corrective steps are being taken to eliminate them through the interdepartmental recruitment process.

Interdepartmental planning and budgeting have been accepted by the basic science chairmen (albeit reluctantly at first) because it has become increasingly difficult for a single department to develop research in broad areas. Therefore, this approach has been endorsed as an adaptive mechanism to meet the current resource situation, but it also appears to offer the best way for future strengthening of the basic science departments. When selecting new Faculty members for tenure-stream positions, the basic science chairmen will choose individuals who are most likely to have a signficant impact in designated areas of research and teaching. Attention is also being given to developing a balance among the essential areas.

From 1985 to 1987, Dr. Moore established four working groups to develop position papers for the following research areas: regulatory biology, neurobiology, developmental biology and the application of new technology to the study of disease. These papers have been discussed by the committee of basic science chairmen and at coordinating meetings of the working group chairmen. As a result, the following general recommendations have been endorsed:

1. The Faculty should foster interdisciplinary programs in regulatory biology, regulation of gene expression, developmental biology, neurobiology, and protein structure and function.
2. Interdepartmental planning should be the important step in the recruitment of new faculty members.
3. Resources and positions should continue to be in the current basic science departments, but there must be input to the recruitment process by those involved in the program areas of research.
4. Development of research outside the selected program areas should also be encouraged, but this should result from interdepartmental planning.

Through interdepartmental planning and budgeting, 15 tenured/tenure stream basic science appointments have been made in the last two years. In summary, although there is a serious shortage of campus space for new investigators and funds for strengthening the campus-based basic science division, the interdepartmental planning and budgeting process begun three years ago is making the most out of the limited available funds and space.

To improve research communications in the basic sciences community a *"Who's Who in the Basic Medical Sciences"* was published in 1985 which included the photographs of many of the researchers. Owing to the success of this book, a second edition currently is being prepared.

Complement Plan for Basic Sciences

There is a consensus amongst the basic science chairmen that five departments are understaffed and need additional budget support in the next five-years in order to improve their academic quality, and to fulfill their teaching and research obligations. In order to improve staffing, a four-year faculty complement plan for strengthening the basic science departments was developed in 1985, with the cooperation of the basic science chairmen and the Directors of the Institute of Biomedical Engineering, the Institute of Medical Science and the Division of Teaching Laboratories. The plan recommended a substantial increase in the tenured/tenure stream complement of the basic science departments. While it is unlikely that all of these positions will be assigned by the Provost's Office because of current budget constraints, the planning process has shown where the greatest staffing needs are, where interdisciplinary research and teaching efforts can be developed and where private funds realized by the University can be applied.

New Departments

As a result of the endowment provided by the Easton bequest and the identification of Immunology as one of the Faculty priorities, the Department of Immunology was formed on July 1, 1984, as discussed previously. It now has a core academic staff of seven full-time equivalents. When all cross-appointed members are included the Department is very large, and is involved in research and teaching throughout the University Health Science Complex. The funding for research done by the core group of professors now exceeds two million dollars. The first Chairman, Dr. Rick Miller, holds the Easton Chair in Immunology.

The Department of Microbiology was formed on February 1, 1983, with the merging of two already established University departments — the Department of Medical Microbiology and the Department of Microbiology and Parisitology. Dr. Leslie Spence has served as the first chairman of the merged department. The improvements in the physical facilities for research and the recruitment of four new full-time academic staff in the last three years have enhanced research activities in the department, which is now supported by over two million dollars in external funding. A recent grant of $1,500,000 from the Ontario Ministry of Health will further increase the research activities of the Department, especially in research related to AIDS.

2.3.3 Clinical and Institutional Affairs Sector

The Clinical and Institutional Affairs portfolio has been occupied by two senior faculty members during my term as Dean: Dr. William Paul from 1977 to 1982 and Dr. Joseph Marotta since 1982. During the past seven years, we have worked hard to achieve a strengthening of the University's relations with the teaching hospitals, and have also participated in a number of developments which have had a substantial impact on health science education and the delivery of health care in Toronto.

There are two major functions in this portfolio. The first is the development and maintenance of a close liaison and working alliance between the Faculty and the administration and boards of trustees of the affiliated teaching hospitals. For example, there is close cooperation between the Associate Dean and the hospitals in terms of structuring the five-year reviews and search committees for hospital chiefs, jointly appointed by the University and the hospital.

The second major function is to oversee the allocation of Faculty resources to the departmental chairmen and to facilitate their administrative work, particularly in personnel problems, budget issues and appointment policies. An area of particular importance

EXHIBIT 5

AFFILIATED TEACHING INSTITUTIONS

FULLY AFFILIATED HOSPITALS

Addiction Research Foundation
Clarke Institute of Psychiatry
Hospital for Sick Children
Mount Sinai Hospital
Ontario Cancer Institute/Princess Margaret Hospital
St. Michael's Hospital
Sunnybrook Medical Centre
Toronto General Hospital
Toronto Western Hospital
Wellesley Hospital
Women's College Hospital

PARTIALLY AFFILIATED INSTITUTIONS

Doctors Hospital
Home Care Program of Metropolitan Toronto
Hugh MacMillan Centre
Lyndhurst Hospital
North York Branson Hospital
North York General Hospital
Orthopaedic and Arthritic Hospital
Queen Elizabeth Hospital
Queen Street Mental Health Centre
Scarborough General Hospital
St. Joseph's Health Centre
Toronto East General and Orthopaedic Hospital
West Park Hospital
Worker's Compensation Board
York Finch Hospital

has been the development (with the assistance of the clinical chairmen and deans) of the full-time clinical appointments document, and the financial ramifications of that document.

Faculty — Hospital Relations

The relationships between the Faculty and its 11 fully affiliated hospitals have undoubtedly, more than any other single area, captured my attention and that of my colleagues who have been Vice-Provost and Associate Dean — Clinical and Institutional Affairs. We need these hospitals and they need the University. At any time, half of our 1,000 medical students, all of our 1,700 interns and residents, and an increasing number of our graduate students are located in the teaching hospitals. In addition, the hospitals have now joined the University in formally accepting responsibility for funding research and educational programs. I have already noted what this does for the Faculty. For the hospitals these academic links provide increased status and satisfaction, improve their ability to recruit excellent staff, and create a climate of inquiry that fosters better patient care.

However, the increasing functional interdependence of the Faculty of Medicine and the teaching hospitals has not had an appropriate administrative counterpart. Therefore, we have worked to create structures that fill this need, such as the Health Science Complex Management Advisory Committee, the Hospital-University Research Coordinating Committee and the Hospital- University Board. The intent of these structures is to achieve better communication and, where possible, joint planning so that the resources available to the Health Science Complex as a whole are developed to the greatest advantage.

There are many examples of success in this regard. New initiatives have been planned jointly (e.g., the acquisition of the lithotriptor, the siting of the Magnetic Resonance research unit, the development of additional trauma and cardiovascular surgery units), concerted action has often been possible (e.g., common approaches to government regarding research funding or the use of animals in research), shared programs have been set up (e.g., the tri-hospital high risk pregnancy service, the transplantation service), and so on.

The Faculty has full affiliations with 11 hospitals. In addition, limited affiliations are maintained with another 15 institutions in Toronto. These are listed in Exhibit 5.

In 1982, an important joint quality control mechanism was introduced through the policy of conducting five year reviews of teaching hospital departments and their chiefs. Under the leadership of the Associate Dean — Clinical and Institutional Affairs, an agreed upon format of the review is now in place, which involves the board, administration and medical advisory committee of the hospital, the University departmental chairman and members of the division under review. It is now standard policy for each hospital unit to be reviewed every five years, thereby monitoring the quality of service, education and research, as well as relationships between the hospital department, its parent university department and the department chairman. Most of the reviews have confirmed the high quality of academic and clinical work in our teaching hospitals, but some have resulted in important recommendations to the Faculty and the hospital, leading to changes that, in some instances, have included the replacement of the chief.

These regular reviews have encouraged the institution of improvements and reallocation of responsibilities much sooner than was formerly the case. There has been a change in the affiliation agreements for most of the hospitals limiting the term of office of chiefs of service to ten years, in most instances, but permitting an extension to a third five-year term under unusual circumstances. We have not yet worked out in satisfactory fashion a smooth transition (including funding) when a hospital chief returns to the ranks after completing two or three terms.

New Developments

The development which by far has had the most impact on the Health Science Complex has been the merger of the Toronto General Hospital and the Toronto Western Hospital to form the Toronto Hospital Corporation. The initiative for this merger stemmed from the hospitals and during the past 18 months it has slowly begun to take form. An immense amount of staff time has been taken up in discussing and then implementing this merger. Although the boards and administration of the two hospitals undertook the process, the University has been heavily involved as well, not only because of the major implications for educational and research programs located at the Toronto General Hospital and Toronto Western Hospital, but also because of the impact of the merger on the other hospitals and inter-institutional relationships within the Health Science Complex. Fully 40% of the Faculty's expenditures in the clinical sector occur at these two hospitals, and a considerable amount of staff time has now been devoted to exploring how to take advantage of the opportunities created by the merger with respect to innovations in education and research organization. It is intended that the savings created by the merger will be applied to new program development. If this occurs as intended, the result should include better clinical and academic programs. This would make worthwhile the heavy involvement of time and energy by many of our academic staff and the emotional upheaval that major change always brings. This merger may provide opportunities for rationalization of some academic programs.

The impact of this merger on the Health Science Complex has been great. The other teaching hospitals were immediately concerned because it was felt that a delicately balanced network was now becoming unbalanced, with a very heavy concentration of power in one institution. As a result, a Joint University-Hospital Planning Committee was established, after much deliberation. This committee was intended to advise the institutions that comprise the University Health Science Complex with respect to issues that involve several or all of them. Unfortunately, the Committee's initial task was to review the proposed relocation of the Princess Margaret Hospital and to study the options being considered and their consequences for our health science centre. This was an extremely large and contentious issue — perhaps too large for the Committee to tackle as its initial task. The committee process floundered, and the Committee was dissolved after only four months. Both the University and the teaching hospitals have reaffirmed their commitment to a joint planning process; as well, the Minister of Health has indicated that he would welcome advice from such a group under the sponsorship of our Hospital-University Board. It is my hope that a new planning committee will become operational in the near future and that it will have the support of all our institutions.

A second merger has been discussed in considerable detail — the suggested union of Sunnybrook Medical Centre and the Wellesley Hospital. This would, of course, confront us with a number of problems in the short run but would offer significant opportunities for future development. The anticipated problems relate to placement of undergraduate and postgraduate students, appropriate interdigitation of the services of the hospitals, and the administrative organization of the merged institution. Should this merger come to pass it would have the benefit of reducing the number of fully affiliated teaching hospitals, a step that is necessary in any event. Of much greater significance, however, is the long term potential for creating a second major medical centre on the spacious Bayview Avenue campus. A city as large as

Toronto, yet with only one medical school, requires more than one major focus of academic medical strength. It is my belief that the Bayview campus will develop inevitably, and a merger of Sunnybrook and Wellesley, with their complementary strengths, in a population rich area of Metro Toronto will greatly accelerate the process.

Needless to say, such a merger will require great coordination and much care to bring about, and it must complement rather than compete with the Queen's Park complex of hospitals. Furthermore, as is well known, there is considerable opposition to this merger at Wellesley Hospital and many problems need to be addressed before it comes closer to reality.

In summary, during the past decade University-hospital relations in Toronto have become more interdependent but no less difficult. Linking structures intended to facilitate communication, planning, administration and academic development in the system have been set up and, in my view, they need to be strengthened further. However, one fact is inescapable — the Faculty and its teaching hospitals are inextricably bound.

2.3.4 Community Health Sector

The Community Health sector has been led by two Associate Deans, Dr. John E.F. Hastings (1975-1981) and Dr. Eugene Vayda (since 1981). Community Health is distinguished by its focus on patterns of health and illness in populations rather than on individuals. In Community Health we seek solutions to health problems beyond the understanding of the biochemical and physiological processes, and take into account the impact of the broader social, political and physical environments on health. Community Health was established as a division within the Faculty of Medicine in 1975 by the Governing Council of the University, after the School of Hygiene was merged with the Faculty of Medicine. It was reviewed in 1980; the reviewers concluded that the Division had made good progress in following the mandate set out by the Governing Council. Since 1980, each of the individual departments and units has also undergone at least one external review. In each case the reviewers highlighted both the strengths and areas requiring further development. An OCGS review of the graduate teaching program was conducted in 1986. Finally, as a result of the 1986 Provostial Review of the Faculty of Medicine, a Task Force to review the Division has been established and is expected to report by December 1987.

Graduate Education

The two graduate areas which are the academic responsibility of the School of Graduate Studies are the Master of Health Science (M.H.Sc.) and the M.Sc./Ph.D. programs. Both have experienced a steady growth since 1980. The M.Sc. and Ph.D. programs have more than doubled their registration over the past seven years.

The professional M.H.Sc. Degree includes specializations in Health Administration, Community Health and Epidemiology, Community Nutrition, Health Promotion and Occupational and Environmental Health. The M.Sc. and Ph.D. specializations are offered in Biostatistics, Health Administration, Epidemiology, Behavioural Science and Exercise Science. An M.Sc. program is also offered in Occupational and Environmental Health.

The postgraduate medical program in Community Medicine has increased from 10 residents in the 1980-81 academic year to 23 in 1985-86. In the current academic year there are 19 residents. The number of residents funded by the Ontario Ministry of Health has increased from eight in 1980-81 to 15 in 1986-87, since Community Medicine has been identified as a priority area by the Ministry.

Research Activities

Individual faculty members in the Division have made major research contributions to a number of fields. From 1980 to 1986 the number of research projects has more than doubled and the total dollar value of research grants more than tripled. Much of the research conducted involves close collaboration with the clinical and basic science departments of the Faculty of Medicine, as well as with hospitals and other research institutions.

The research conducted in the two cancer units of the National Cancer Institute of Canada (NCIC) and the Ontario Cancer Treatment and Research Foundation (OCTRF) is widely known and highly regarded. Currently, the NCIC Unit is focussing on breast cancer and the links between diet and cancer. The national breast screening study, initiated in 1980, is one of the largest controlled trials of screening to be initiated anywhere, and will provide evidence on the effectiveness of mammography in reducing mortality from breast cancer. A major accomplishment of the OCTRF is the Ontario Cancer Registry, which now has cancer incidence data for Ontario for the period 1964-1983. Both units are affiliated with the Department of Preventive Medicine and Biostatistics, as is the Canadian Liver Foundation Epidemiology Unit. Researchers in this latter unit are currently engaged in projects on hepatitis B and AIDS.

The Clinical Research Support Unit (CRSU), also in Preventive Medicine and Biostatistics, was established in 1983 to provide consultation on research methods and analysis to researchers in the Faculty of Medicine, as well as the teaching hospitals and other institutions. In the past three years the CRSU has been involved in over 400 projects.

The Health Care Research Unit (HRCU) is funded by the Ontario Ministry of Health and provides consultation and assistance to community health agencies as well as initiating its own research. It is associated with the Department of Health Administration. In a given year the HCRU undertakes approximately 100 projects for hospitals, health units, government and voluntary agencies.

Within each of the departments and units a broad spectrum of health issues is under investigation. The research areas addressed from 1980-1986 include the broad topics of health and aging, emotional health, international health systems, cancer epidemiology, AIDS, physician behaviour and organization, cost containment, health policy, organizational research, technology acquisition and impact, strategic planning, health behaviour, and occupational and environmental health.

In order to inform interested members of the University and community about research in the Division, a Community Health Research Day is held each year. The program consists of representative papers submitted by faculty and students from all parts of the Division. There is also a weekly seminar series with presentations on research in progress by each of the departments and units.

Internal and External Relations

A productive working relationship has developed between the sector and the program deans in relation to the undergraduate medical curriculum, the residency program in Community Medicine and research endeavours within the Division. As well, the Division has formal and informal links with a number of other faculties and programs within the University. These include Dentistry through the Diploma in Dental Public Health; the Department of Nutritional Sciences through the M.H.Sc. specialization in Community Nutrition; the School of Physical and Health Education through the M.Sc./Ph.D. program in Exercise Sciences; the Department of Statistics in the Faculty of Arts and

Science; and the Faculties of Social Work and Management Studies, both of which have courses cross-listed with the Division of Community Health.

The Division's ties with health personnel in the field are extremely strong. These ongoing relationships are maintained to a great extent by the active work of the two alumni associations, the Society of Graduates in Health Administration and the Community Health Alumni Association. Both organizations sponsor events which provide an opportunity for alumni, students and faculty to meet and discuss shared interests.

Committed health professionals in hospitals, public health units, the provincial government and voluntary agencies hold cross-appointments in the departments of the Division, and contribute to its research and teaching activities. In addition, they act as preceptors for the practicum placements of M.H.Sc. students.

Achievements and New Developments

In 1983, Faculty Council recommended that the emphasis on Community Health in the undergraduate medical curriculum be increased and a coherent program in community health be offered spanning the four undergraduate medical years. A subcommittee of the Undergraduate Medical Curriculum Committee, chaired by Dr. Catherine Chalin, undertook a substantial revision of the Community Health courses offered to undergraduate medical students in all four years. Of particular importance is the shift from didactic lecture style teaching to small group problem-oriented learning. Students are now offered a core set of courses plus selectives.

A course in critical appraisal is a new addition to the curriculum; the knowledge and skills of critical appraisal techniques is an important learning objective for medical school graduates. While the principles of critical appraisal of clinical literature are introduced early in the program, they have limited relevance for the medical student until he/she has mastered the basics of pathophysiology and has been introduced to patient care. The course in critical appraisal will give students a framework and analytical tools needed to identify methodologic and analytic strengths and weaknesses in published research studies. Such analysis enhances the students' ability to assess the validity of the conclusions and recommendations in the literature.

Given the growing interest in health promotion, the Division is increasing its emphasis on training and research in health promotion. A new health promotion course is being offered in the Department of Behavioural Science that stresses application strategies. Divisionally, an interdisciplinary group is examining the faculty's research interests and activities as they relate to health promotion.

During 1984, the Division of Community Health and the Departments of Social and Preventive Medicine, Health Administration and Occupational Health at the University of Montreal met to discuss potential areas of collaboration. The discussions resulted in joint presentations by members of the two universities at two international meetings in 1985. A conference hosted by the University of Montreal analysed the Ontario health care system and included presentations by the Community Health faculty and representatives from the Ontario government and other health institutions.

We are in the final stages of negotiating an agreement between the East York Health Unit and the University of Toronto which will establish the East York Health Unit as a teaching health unit for both the Faculties of Medicine and Nursing. We have begun similar negotiations with the City of Toronto Health Unit. Once these negotiations are complete we will make a formal proposal to the Ontario Ministry of Health for recognition of, and funding for, the teaching health units. The establishment of teaching health units is essential for the Community Health residency program, which will now require that residents spend 13 months of the three year program working in two health units in the province.

2.3.5 Service Sector

The Deans' Offices and several centrally managed service divisions comprise the fourth sector of the Faculty of Medicine. They report administratively to the Chief Administrative Officer, Mr. James D. Kraemer. The focus of this sector is essentially administrative, but ranges from the academic leadership provided to the Faculty by the Decanal Team through to the variety of clerical and technical support services necessary to sustain quality research, teaching and administration.

In fulfilling our leadership functions, the Associate Deans and I depend heavily upon the operational support provided by the administrative staff of the Deans' Offices. Apart from the immediate secretarial support for the respective Deans, approximately 30 administrative, clerical and secretarial staff are involved in the day-to-day operations, concerned with budget development and financial management, academic promotions and appointments, space utilization, safety and information systems, as well as the services that more directly support our undergraduate, postgraduate and continuing education programs and that plan and promote Faculty programs as well as the development of research.

The Faculty of Medicine's various research, teaching and administrative endeavours are well-served by a group of centrally managed service divisions. Operating under close scrutiny of their users, each of these services has been responsive to the current needs of teachers, investigators and administrators. In the face of the Faculty's budgetary stringencies each has also had to be managed as a cost-effective enterprise. Faced with these expectations and operating outside the protective umbrella of an academic department, the service divisions face considerable pressure to perform. As a result, the Faculty of Medicine has had the advantage of being able to provide faculty members with access to an array of state-of-the-art services, expertise and technology which might otherwise not have been available or affordable.

The service divisions and the staff associated with them have demonstrated their commitment and dedication to the objectives of the Faculty. The Division of Studies in Medical Education and the Division of Teaching Laboratories have been described previously. The Division of Laboratory Animal Sciences (DLAS), the Division of Medical Computing and the newly established Technical Services Division are concerned almost exclusively with providing essential services in support of the Faculty's research activities. Their operations are only partially subsidized by the Faculty's base budget and they are increasingly dependent upon recovery of their costs by charging for services they provide to investigators. The current expectation is that DLAS and Technical Services will be fully-recoverable operations by the end of the current decade, an achievement for which the division directors deserve much praise.

The two largest divisions, Instructional Media Services and Central Services, are also the two most entrepreneurial and fastest growing service operations in the Faculty. By the nature of the services they offer, these divisions support research, teaching and administrative activities not only within the Faculty of Medicine but also within the University at large and to an increasing degree in

TABLE 12

FACULTY TURNOVER 1980 - 1986
BREAKDOWN OF ARRIVALS AND DEPARTURES

SECTOR	1980		1981		1982		1983		1984		1985		1986		1980-86	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Community Health	16	22	24	12	22	8	21	8	17	9	21	8	16	29	137	96
Basic Sciences	24	14	17	15	15	8	17	8	12	11	35	12	19	14	139	82
Clinical Sciences	174	94	187	86	201	98	239	120	207	118	204	91	223	158	1435	765
All Faculty	**214**	**130**	**228**	**113**	**238**	**114**	**277**	**136**	**236**	**138**	**260**	**111**	**258**	**201**	**1711**	**943**

TABLE 13

FACULTY TURNOVER BY SECTOR AND RANK 1980 - 86

Rank	Community Health		Basic Sciences		Clinical		All Faculty	
	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.	Arr.	Dep.
Professor	5	9	6	5	26	33	37	47
Assoc. Prof.	16	19	11	25	61	99	88	143
Asst. Prof.	42	24	78	13	358	167	478	204
Lecturer	48	31	5	4	754	325	807	360
Instructor	—	—	—	—	196	108	196	108
Research Assoc.	25	13	36	35	39	30	100	78
Tutor	1	—	3	—	1	3	5	3
Total	**137**	**96**	**139**	**82**	**1435**	**765**	**1711**	**943**
Net	**+ 41**		**+ 57**		**+ 670**		**+ 768**	

TABLE 14

NET FACULTY TURNOVER 1980 - 1986

SECTOR	1980	1981	1982	1983	1984	1985	1986	1980-86
Community Health	- 6	12	14	13	8	13	- 13	+ 41
Basic Sciences	10	2	7	9	1	23	5	+ 57
Clinical Sciences	80	101	103	119	89	113	65	+ 670
All Faculty	**84**	**115**	**124**	**141**	**98**	**149**	**57**	**+ 768**

the teaching hospitals. These divisions have both accepted as their mandates the challenge of increasing both the array of services they offer and the client base they serve so as to become fully self-funded by 1988.

2.4 RESOURCES

The resources that support the programs and departments of the Faculty of Medicine are substantial. Among academic divisions, this Faculty rates second only to the Faculty of Arts and Science in the amount of University human, fiscal and capital resources for which it has accountability.

While University resources are the core support for its academic endeavours, the Faculty of Medicine has the added advantage of access to the array of resources which support the health services system in Toronto. The 11 fully affiliated teaching hospitals, their established or emerging research institutes and their active medical staff are as essential to the Faculty as are its more directly controlled University resources. Additionally, the hospitals, public health units, community based physicians, and other related agencies with which the University has a limited affiliation help to sustain the medical school's various undergraduate, graduate and postgraduate professional education programs. The focus of this section is on the University-administered resources available to the medical school; however, it is essential to recognize the extent to which these are supplemented by the adjacent community. Government underfunding and the resultant resource constraints endured by the University in recent years have emphasized the importance of these community linkages and the Faculty of Medicine has become increasingly dependent upon them.

2.4.1 Academic Complement and Renewal

Unquestionably the excellence and the extent of any academic division's scholarly endeavours derive from its academic staff. Normally the complement of academic staff would depend directly upon University budget and fiscal resources. Fortunately this has not been the case for the Faculty of Medicine. Perhaps nowhere is this medical school's dependence upon community resources more evident than in its academic staff.

The goodwill and voluntary commitment of clinical teachers plus the shared interests of the medical school and the affiliated teaching hospitals in research, education and service account for the growth and renewal in academic complement, illustrated in Tables 12, 13 and 14. Along with the increase in personnel support from grants and trusts, these community linkages account for the differences between the total number of academic staff in the Faculty and the number of "full-time equivalent" academic staff who receive University salaries through the operating budget. Our community linkages are evident as well in the growing discrepancy between our numbers of full-time-equivalent faculty whose salaries are supported by University funds and those whose University salaries are supported by funds recovered from practice groups and hospitals.

By far it has been the loyalty and voluntarism of clinical teachers that has enabled the Faculty of Medicine to extend its accomplishments and broaden its horizons in education. Through these clinical teachers, undergraduate and postgraduate medical students gain access to the variety of clinical experience offered by this community. Their teaching contributions far exceed what the Faculty could otherwise afford were it dependent exclusively upon its University fiscal resources. Understandably, the medical school is acutely sensitive to maintaining the goodwill of these clinical teachers; hence, increasingly over the past few years the decline in their morale and in their commitment has been of growing concern. Finding ways and means to recognize their contribution within the University, where tangible resources are inadequate and intangible acknowledgement depends upon scholarly (vs. professional) criteria, is a difficult challenge. Meeting the challenge is essential, however, because these contributions are what have enabled the Faculty not only to meet the University budget cuts but also to direct a greater portion of its scarce resources to the support of full-time teachers and investigators in all three sectors.

It is of interest to examine Tables 15 and 16 which present data on the sex distribution of the academic staff by rank and department. Although almost 40% of our medical students, and the vast majority of our occupational and physical therapy students, are women, only 32% of our total academic staff are women — 18% of associate professors and 6.5% of full professors. No doubt, this reflects the fact that only in recent years have women been hired as academic staff members, and they have not yet had sufficient time to achieve promotion to the higher ranks. Clearly, the most popular disciplines for women on our staff are Rehabilitation Medicine, Family and Community Medicine, Paediatrics, Psychiatry and Behavioural Sciences. Supplementary Table 3 provides complete figures on current Faculty appointments.

The foundation for the programs and departments of the Faculty consists of those academic staff who have made a career commitment to full-time academic activity. In most cases, their commitment is reciprocated by the University. This is certainly true for the academic staff with tenured and tenure-stream status who tend to be appointed in the Basic Science and Community Health sectors. It also tends to be the case for those clinical teachers who have made a comparable full-time commitment to the University and who have clinical full-time status.

The process of redefinition and identification of "full-time clinical teachers" is ongoing and vexing. Pending the resolution of this process, it must be noted that among the clinical teachers whom the University officially considers to be "full-time" (because they receive a salary equal to or greater than minimum-for-rank), there are some who do not, in fact, devote themselves full time to University-directed activity. Similarly, there are a substantial number of truly full-time academic individuals who receive their salaries from other institutions or who are otherwise perceived in the University's formal fiscal terms as "part-time."

Tenured academic staff and their colleagues in tenure-stream positions are a critical resource. Indeed, tenured and tenure-stream posts are now managed both within the Faculty and the University as an allocatable resource, linked directly to plans and priorities as well as to base budget. Within the Basic Sciences and Community Health, such positions are essential to sustaining continuity and achieving long term excellence. Their allocation is similarly essential to the development of new initiatives and the renewal of ongoing programs.

The harsh realities of successive budget reductions plus strong encouragement from the University administration have fostered a methodical complement planning effort for tenure posts in the Faculty. From an established pool of 249 tenured and tenure-stream posts in 1981, the Faculty of Medicine has a current complement of 195 tenured faculty plus 25 faculty in the tenure-stream (see Tables 17 and 18). The reduction in the tenured establishment has resulted in part from attrition and budget reductions. However, it is also the result of the Faculty's reluctance to seek approval for more than the most essential tenure-stream positions over the past few years, until it can respond to the University's call for a plan governing the allocation of such posts.

TABLE 15

CURRENT FACULTY APPOINTMENTS BY RANK AND SEX

	Prof.	Assoc. Prof.	Asst. Prof.	Lect.	Inst.	Res. Assoc.	Tutor/ Sr. Tutor	Prof. Emer.	Visit. Prof.	Adj. Prof.	Total
Female	25	96	271	341	62	21	9	10	6	4	845
Male	383	526	897	565	107	34	2	97	29	10	2,650
TOTAL	**408**	**622**	**1,168**	**906**	**169**	**55**	**11**	**107**	**35**	**14**	**3,495**

TABLE 16

CURRENT FACULTY APPOINTMENTS BY DEPARTMENT AND SEX

	Female	Male
Anatomy	8	27
Anaesthesia	46	144
Art as Applied to Medicine	9	11
B.B.D.M.R.	3	14
Behavioural Science	16	14
Biochemistry	12	36
Clinical Biochemistry	7	53
Family and Community Medicine	90	200
Health Administration	13	42
Immunology	5	10
Medical Biophysics	3	42
Medical Genetics	5	22
Medicine	96	512
Microbiology	18	48
Nutritional Sciences	7	12
Obstetrics & Gynaecology	20	117
Occupational Health Unit	4	25
Ophthalmology	10	75
Otolaryngology	13	58
Paediatrics	71	164
Pathology	30	107
Pharmacology	4	41
Physiology	8	39
Preventive Medicine & Biostatistics	32	55
Psychiatry	130	345
Radiology	40	122
Rehabilitation Medicine	124	32
Surgery	21	285
TOTAL	**845**	**2,652**

The complement planning initiatives by the Basic Science and Community Health chairmen, described in preceding sections, represent the first and perhaps most significant phase in development of a Faculty complement plan. Notwithstanding repeated calls for interdepartmental planning and budgeting since the outset of the present decade, it was only by focusing on tenure complements that this was achieved in the Basic Sciences and renewed in Community Health.

The sector complement plans are now undergoing refinement and modification from a Faculty-wide perspective. This broader perspective will integrate these plans with the related staffing objectives of the clinical departments. Their further refinement in terms of Faculty priorities for ongoing programs and new developments must also be achieved. Finally, it will be essential to modify these refined plans, which have excellence as their appropriate objective, in order to achieve a complement plan that takes full account of our fiscal realities and that has reasonable prospects for implementation. The anticipation of future base budget reductions must be as much a part of the Faculty Complement Plan that will eventually emerge as the aspirations for future excellence have been a part of the sector plans. Both are essential for implementation.

2.4.2 Budget and Finance

The operating budget of the Faculty of Medicine, along with a variety of endowed and expendable trust funds plus the grants in support of research described previously, comprise the substantial fiscal resource for which the Faculty has accountability. Research grants are restricted for specific purposes although they frequently supplement the Faculty's operating budget directly in the form of income for services and indirectly by supporting certain departmental operations and specialized education requirements. Similarly, endowed and expendable trust funds are frequently targeted for specific purposes essential to the Faculty's ongoing programs and departments and occasionally to stimulate new initiatives. They too supplement the operating budget in some instances. The restrictions in use of these grants, endowments and trusts — usually determined by their respective granting agencies and donors — preclude their allocation and use for priorities and programs that the Faculty might prefer to support. Nevertheless, they represent a vital, substantial and growing resource that both reflects and sustains the Faculty's reputation for excellence in research and education.

The ongoing core programs and the new initiatives or priorities of the Faculty depend upon the allocation and management of its operating budget. With gross expenses budgeted in excess of $79 million in 1986/87, the total operating budget is close to double the approximately $40 million of hard University funds that have been allocated to the medical school. This is illustrated, with comparable 1980/81 figures, in Figure 6. To a large extent the softer 50% of total operating funds is restricted for support of specific salaries in the case of T & R and other recovered funds, and for specific purposes in the case of other income from student fees, endowments, trusts and service income (see Table 19). The respective growth in the gross budget over the past seven years is illustrated in Exhibit 6.

The Faculty's annual budgeting process, like that of the University, focuses upon the net hard University component of the operating budget (see Figure 7). With fractional fluctuations over the past decade, this has amounted to approximately 10% of the University's net operating funds.

Faced with successive base budget reductions over the past decade, as well as with the requirement to reallocate base funds each year for new objectives and commitments, the annual budgeting process is an arduous and demoralizing one. It is aggravated by the degree to which such a large portion of the base budget is committed to support the salaries and benefits of tenured and full-time academic staff. Currently, with past reductions having virtually eliminated options for reducing other academic and non-academic salary commitments and non-salary expenses, the process is inevitably dependent upon attrition, our own income generation, squeezing marginal savings from operations or transferring costs to other funding sources such as research grants. Briefly, the budgeting strategy has involved both general compression in all sectors and virtually all departments and relevant specific increases or decreases. In the end, departmental reductions have been discretionary based upon the Decanal team's judgement of the fiscal ability of respective departments to accommodate reductions, and the relative impact that these reductions may have on the overall quality of the Faculty's academic programs. Increasingly over the past few years, this judgement has taken into account the centrality or quality of each department's academic activity.

As a minimum, each sector is expected to accommodate its pro-rata share of the base budget reduction assigned by the University. At the outset of the process each sector is also expected to accommodate the costs of Faculty commitments to existing departments and programs in the sector.

To the maximum extent possible, new departments and interdepartmental initiatives are established by transferring staff and their funding along with their academic responsibilities from existing, parent departments and by assigning new funds derived from new sources. Beyond this, any balance of required funds must be handled as a further base budget obligation of the appropriate sector(s).

In that discretionary reductions are both desirable and necessary, a preliminary reduction is assigned to each department. The preliminary reduction represents the maximum percentage reduction that the departments in a given sector can expect to face. The total of assigned preliminary reductions exceeds the budget requirements of the sector; however, it thereby provides for the examination of a common percentage of all departmental base budgets within which discretion and judgement can be exercised. This examination is facilitated by permitting each chairman to assess and to report on the feasibility or the impact of the reductions that his/her department might have to accommodate.

Over the past seven years, the effect of this budgeting process has been to reallocate significant fiscal resources amongst respective departments and, to a lesser degree, amongst respective sectors. These shifts in budget are reflected in Table 20. The most significant changes over time have been the 4.5% reduction in the clinical sector's share of the net base budget and the services sector's 4% increase. This does not reflect a direct transfer of funds between these sectors. In fact, tracking successive reallocations will demonstrate that all three academic sectors have at times contributed *and* received base funds from the services sector and that frequently the basic and community health sectors have benefitted from the greater degree of base budget flexibility in the clinical sector. Even so, the apparent growth of the services sector warrants comment.

Comprised of both the Dean's Offices and the centrally managed service divisions, the services sector has increased its share of the Faculty's base budget by 4% over the past seven years. A minor portion of this increase is attributable to real growth because the Decanal team and its immediate support staff have

TABLE 17

CURRENT TENURED AND TENURE-STREAM FACULTY BY DEPARTMENT, RANK AND SEX

	TENURE-STREAM				TENURED			
	Asst. Prof.		Assoc. Prof.		Assoc. Prof.		Professor	
	F	M	F	M	F	M	F	M
Anatomy					1	6	1	7
Anaesthesia					-	1	-	2
Art as Applied to Medicine					1	-		
B.B.D.M.R.					-	3	2	7
Behavioural Science					2	3	1	2
Biochemistry					1	3	1	16
Clin. Biochem.							-	5
Fam. & Comm. Med.			-	1			-	2
Health Administration	-	2	-	1	2	2	1	4
Immunology	2	-			-	2	-	4
Medical Biophysics							-	5
Medical Genetics	-	1			-	2	-	7
Medicine			-	1	-	2	-	7
Microbiology	1	1	-	1	1	3	2	4
Nutritional Sciences	2	1			2	3	-	3
Obstet. & Gynaecology							-	2
Occ. & Env. Health Unit			-	1			-	1
Ophthalmology							-	1
Otolaryngology							-	1
Paediatrics							-	2
Pathology			-	1	-	2	-	4
Pharmacology			-	1	-	4	-	11
Physiology	-	1			-	5	-	11
Prev. Med. & Biostatistics	-	2	1	-	2	2	1	6
Psychiatry					-	1	-	2
Radiology					-	1	-	1
Rehabilitation Medicine	-	3	1	-	4	2	1	3
Surgery					-	1	-	1
TOTAL	**5**	**11**	**2**	**7**	**16**	**48**	**10**	**121**

TABLE 18

CURRENT TENURED AND TENURE-STREAM FACULTY BY SECTOR, RANK AND SEX

	TENURE-STREAM				TENURED			
	Assoc. Prof.		Asst. Prof.		Professor		Assoc. Prof.	
SECTOR	F	M	F	M	F	M	F	M
Basic Sciences	—	2	5	4	6	75	5	31
Clinical Sciences	1	3	—	3	1	33	5	10
Community Health	1	2	—	4	3	13	6	7
SUB TOTAL	2	7	5	11	10	121	16	48
GRAND TOTAL	**9**		**16**		**131**		**64**	

TABLE 19

1986 - 87 OPERATING BUDGET SUMMARY

Sector	Gross $('000)	T & R $('000)	Other Recoveries $('000)	Income $('000)	Net $('000)	% of Net
Basic Sciences	12,617.6	—	534.2	294.5	11,788.9	29.4
Clinical Sciences	46,631.5	11,191.5	16,861.2	240.4	18,338.4	45.8
Community Health	3,663.2	—	289.4	11.0	3,362.8	8.4
Deans Offices/Services	16,380.6	334.3	300.4	9,161.4	6,584.5	16.4
TOTAL	**79,292.9**	**11,525.8**	**17,985.2**	**9,707.3**	**40,074.6**	**100%**

expanded. However, virtually all of this growth has been financed within the sector as the service divisions have accommodated relatively large base budget reductions in their movement toward full cost-recovery. The major portion of the increase in share is artificial in that it represents both base budget funds in transit amongst departments that are retained temporarily in the Dean's Office and the transfer of funds from departments to the Dean's Office for the salaries of former chairmen and deans.

Each year the Dean's Office allocates one-time-only funds to take advantage of opportunities, to cover the costs of unexpected emergencies and to supplement central University funds for the acquisition of equipment or the renovation of physical facilities. The requirement to do so is crucial to the Faculty's operation and development. Hence, financing and budgeting strategies have been adopted to ensure that funds are available each year. Annually, a major portion of the Faculty's carryforward from the previous year is utilized for these purposes. Also, it has long been the Faculty's practice to assign departmental budget reductions in order to meet commitments associated with new academic appointments approved for other departments. The budget reductions are usually assigned before the searches for these appointments commence; the base funds are transferred to the Dean's Office and utilized for one-time-only purposes until they are required by the receiving department. In the subsequent year they are of course allocated to that department's base budget and the cycle is repeated. Perhaps more than any other single budgeting strategy, this mechanism has enabled the Dean's Office to sustain the fiscal flexibility that is so essential for stability and new initiatives in the environment of declining fiscal resources. Certainly, it has been crucial for such major new acquisitions of equipment as the magnetic resonance research facility, for the acquisition of other new and replacement equipment in departments, and for the occasional refurbishing of the Faculty's physical facilities.

2.4.3 Space

The University has allocated the Faculty more than 51,706 square metres of assignable research, teaching, service and office space in nine buildings on the St. George Campus. In addition, certain of the affiliated teaching hospitals have provided rent-free accommodation for on-site Faculty teaching and service operations as well as for research and departmental offices.

While they are extensive, the University facilities occupied by the Faculty of Medicine are of variable quality — excellent albeit inflexible research space throughout much of the Medical Sciences and Best Buildings; dysfunctional space in the McMurrich Building; inadequate in the case of office and computing accommodations and 88 College Sreet; and antiquated or substandard in the case of research accommodation in the FitzGerald and Banting Buildings. The Faculty's capacity to improve these facilities is limited; nevertheless some notable undertakings have been accomplished (such as the current renovation of part of the FitzGerald Building for Microbiology laboratories). The University's capacity to improve and expand the space resource has been, in fact, virtually non-existent in the current decade. However, there is some prospect that the latter constraint could be relieved in the near future.

Recently, the Faculty has resurrected its long-range space plan and is currently updating this with a view to its ultimate integration with the University's overall plan for accommodations and facilities. At the same time, the Faculty has adopted policies to govern the allocation of its existing facilities in accord with its academic goals and priorities.

As with all other University resources available to the Faculty, as Dean I have had responsibility for allocating space and for ensuring its effective utilization and management. The University space occupied by the Faculty is currently distributed among departments and other administrative units in respective sectors. The assignment or reassignment of space among faculty members is carried out by chairmen in accord with their standards of effective utilization and in order to optimize the academic potential of their departments. The reallocation of space between departments within a single sector may be undertaken by the chairmen and the Associate Dean concerned. Decisions involving a major reallocation of space or other resources in order to initiate a new departmental, divisional or Faculty program or to optimize the Faculty's academic potential are made after the recommendations of the Space Advisory Committee (consisting of sector associate deans, the Associate Dean — Research, the Chief Administrative Officer and the Dean) have received full consideration by the entire Decanal team.

FIGURE 6

SOURCE OF ALL OPERATING FUNDS
1980 - 1987

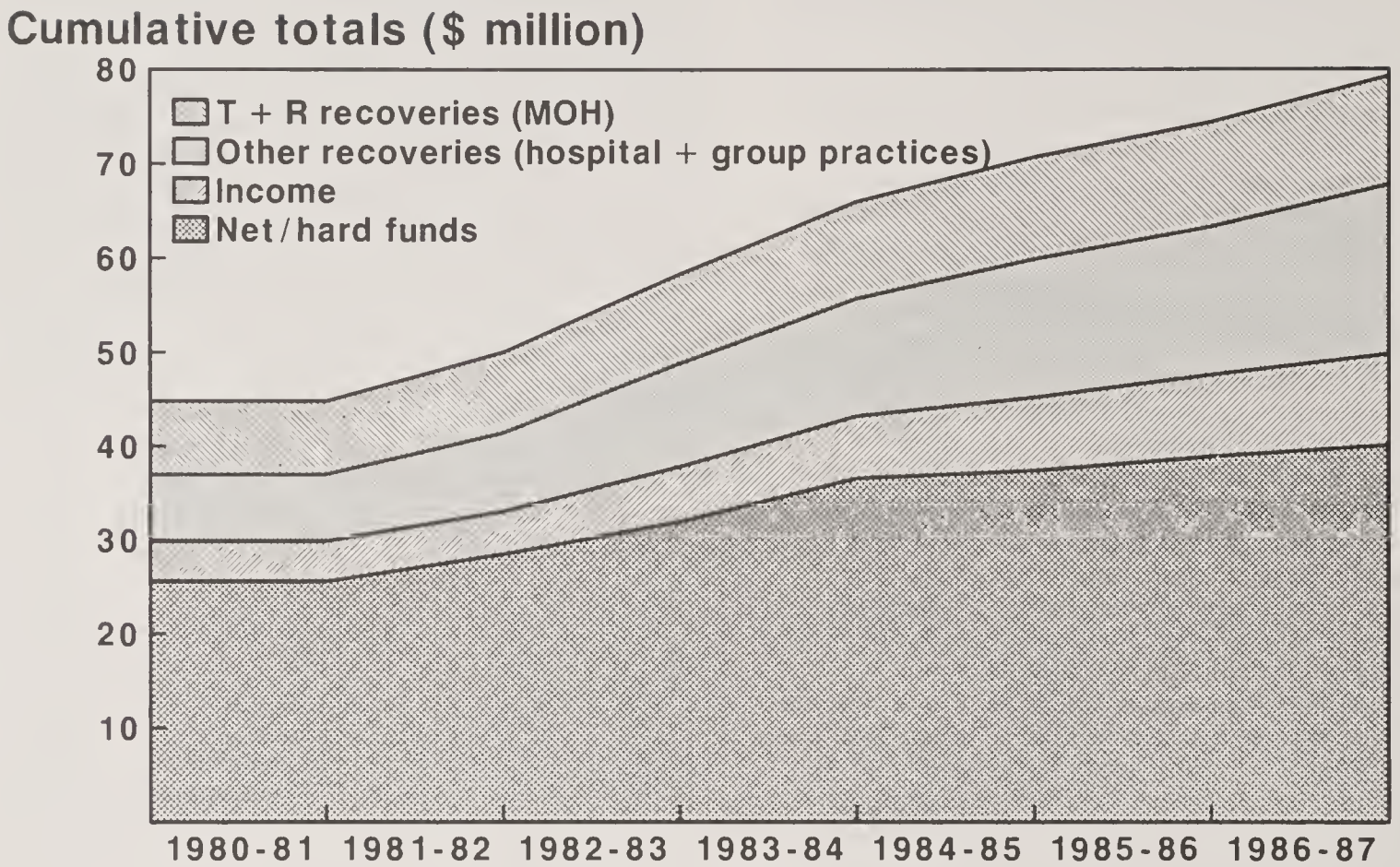


EXHIBIT 6

GROSS BUDGET

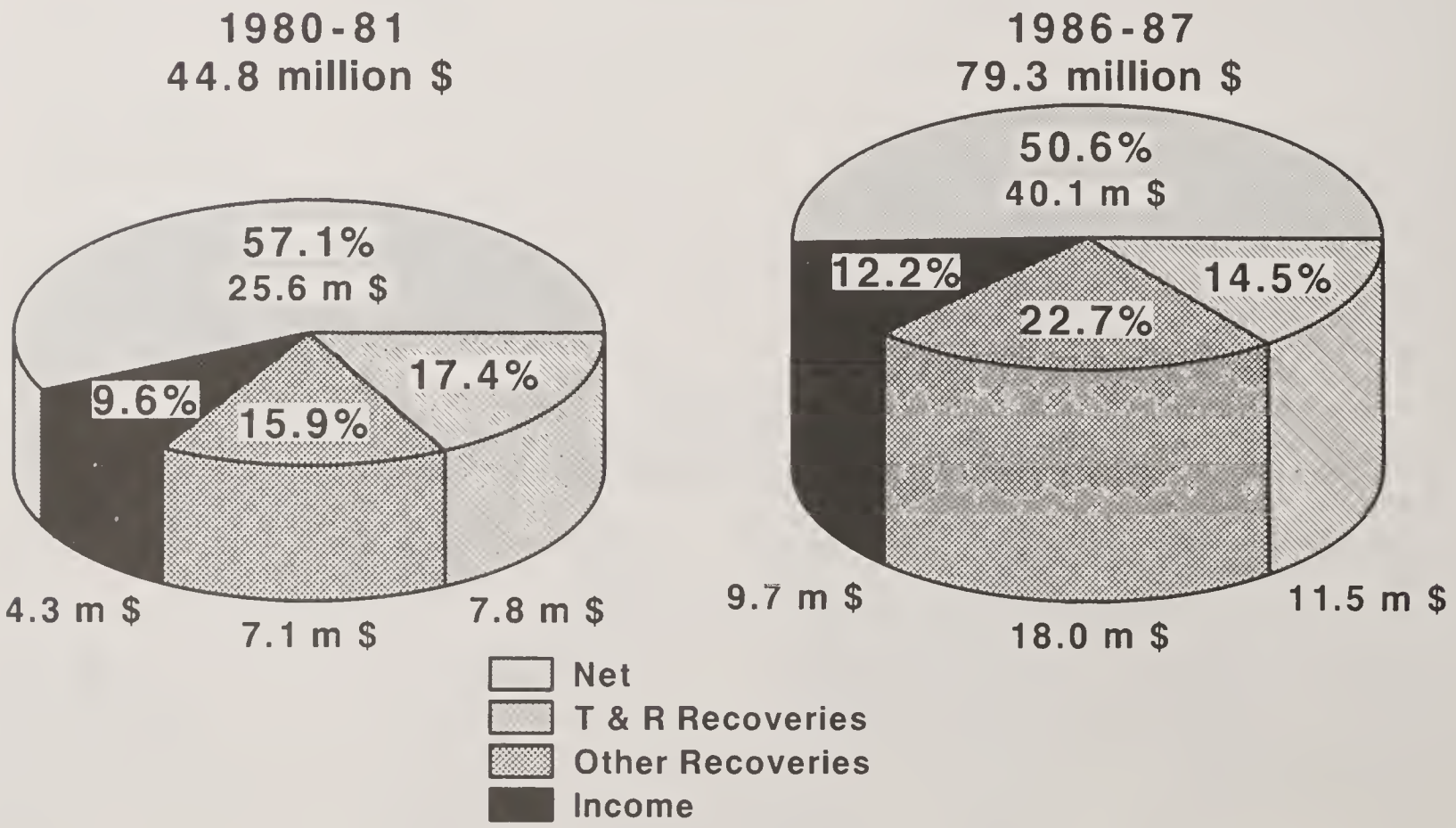


FIGURE 7

SECTOR OPERATING BUDGETS (NET)
1980 - 1987

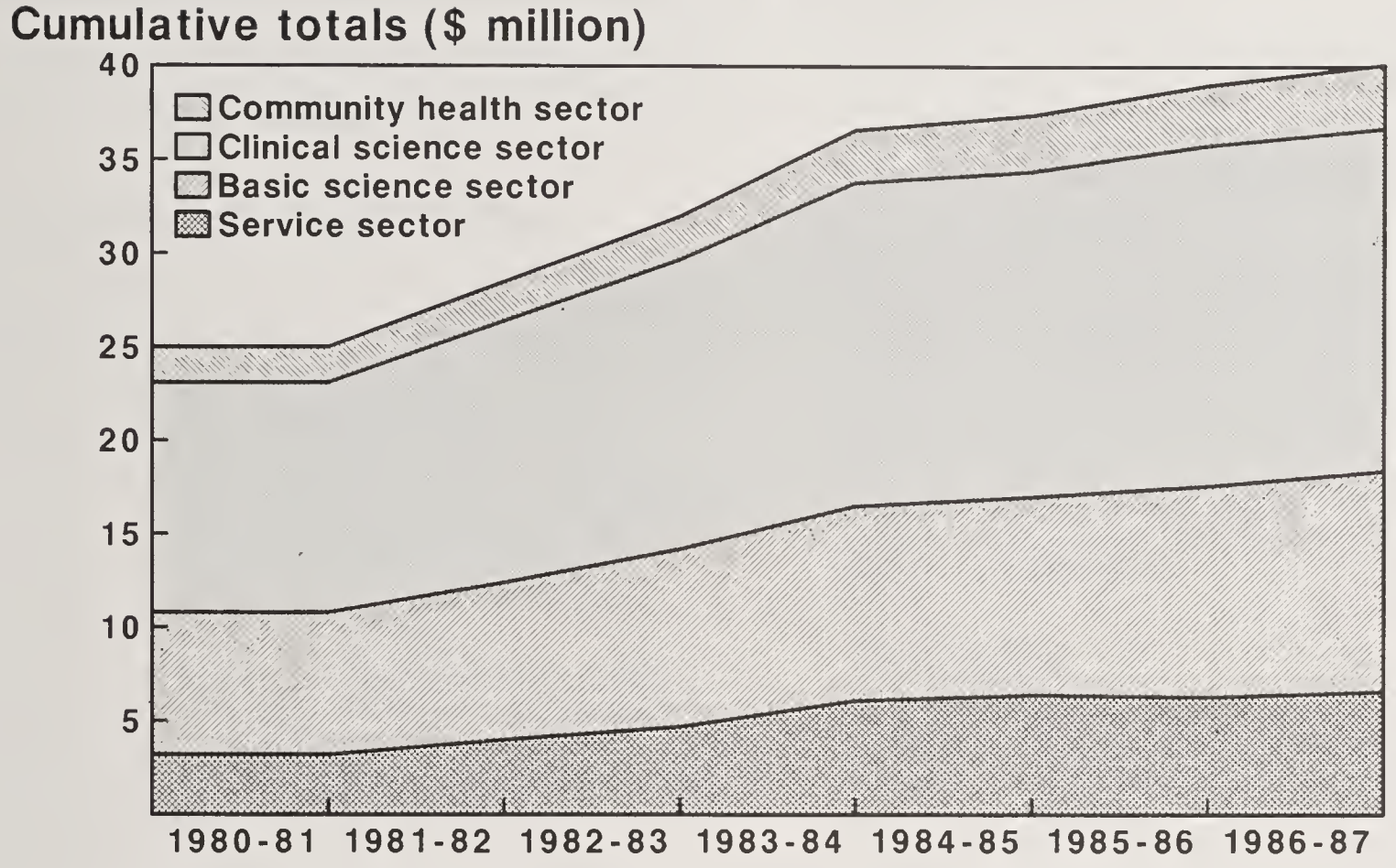


TABLE 20

% SHIFT OF HARD (NET) UNIVERSITY FUNDS
1980/81 - 1986/87

Sector	1980/81 $*	1980/81 %	1986/87 $*	1986/87 %	Variance
Basic Sciences	7,640.0	29.9	11,788.9	29.4	(0.5)%
Clinical Sciences	12,848.4	50.3	18,338.4	45.8	(4.5)%
Community Health	1,905.8	7.4	3,362.8	8.4	1.0%
Deans Office/Services	3,155.9	12.4	6,584.5	16.4	4.0%
TOTAL	**25,550.1**	**100%**	**40,074.6**	**100%**	

* Thousands of dollars

3. DIRECTIONS FOR THE FUTURE

As described in the previous sections, there are many initiatives well underway which will continue during the next few years. These may be considered the legacy of the past seven years, and they will form the starting point for developments during the term of my successor. Some of these merit additional comment, as their implications could be far-reaching for the Faculty.

3.1 FACULTY LONG-RANGE PLANNING

One of the valid criticisms, voiced frequently in recent years, concerns the absence of an effective mechanism for long-range and strategic planning in the Faculty. This concern led to a recommendation, prominent in the 1986 Provostial Review of the Faculty, for establishment of such a mechanism. Of course, considerable planning is done at the level of individual departments, but this is variable and the Dean's Office has not been able to integrate these plans well and set clear priorities for the Faculty as a whole. In our organization, as in so many others, the daily pressures of operational planning, operational management and crisis control have preempted strategic planning.

In 1986, in response to this problem, I established the Dean's Strategic Planning Committee (DSPC), chaired by myself and composed of three associate deans and four department chairmen. After nearly eight months of engagement in a strategic planning exercise coordinated by Ms. Sherril Gelmon, we circulated a revised Faculty mission statement, goals and objectives, and standards and criteria for judging programs to departmental chairmen, division directors and the members of the decanal team. They were asked to comment on this material and to respond by identifying the strengths, weaknesses and priorities for the future of their constituencies. This material can form the basis for a strategic plan for the Faculty, and it is my hope that this process will continue under Dr. John Dirks' leadership.

3.2 ACADEMIC PROGRAMS

The Faculty Education Committee is committed to continue to develop a more challenging undergraduate medical program that produces graduates more closely matched to society's needs and expectations of physicians. This can be accomplished by introducing more opportunities for self-directed learning, more flexibility in the individual student's curriculum, more problem-based learning in specific areas of the curriculum, and more flexibility for our affiliated hospitals to build on their own strengths and resources. Part of this development will involve an increased emphasis on how the students learn, as well as what they learn.

We are also poised to continue to nurture our other undergraduate programs in order both to meet societal needs and to develop programs of excellence. Our non-medical programs in rehabilitation will be strengthened by the development of graduate level education with the accompanying research and academic expertise. Medical illustration, with a closer link to the Department of Anatomy, will be able to provide innovative approaches to visual scientific materials by creating the appropriate academic environment. Our responsibilities to teaching in other health science faculties and to Arts and Science students will no doubt continue to be fulfilled; more careful monitoring of our commitments is necessary so as to ensure that the high academic quality of a smaller number of courses is maintained and enhanced. Intramural methods to assess the academic need and quality of these programs will be required if shifts in commitments are to occur.

Dr. Sellers and his colleagues hope to develop the first Masters in Education (Health Sciences) program in English-speaking Canada, in order to encourage study in the field of health sciences education. This will be the responsibility of the present Division of Studies in Medical Education, which will take a much more active role in educational development in the Faculty.

With respect to our residency programs, it will be essential to evaluate carefully our commitments to the various teaching hospitals and to reallocate resources if necessary in order to maintain our high standards of residency education. Many of our programs are overextended now, and with the prospect of further cuts in resident numbers, a reduction in the number of teaching sites seems inevitable.

Finally, in the area of continuing education it will be possible to establish Toronto as a major North American resource for practising health professionals.

3.3 RESEARCH

The promotion and development of research has been one of the top priorities during my seven years as Dean. As has been described in this report, we have accomplished much and can be proud of the position Toronto now occupies in the health sciences research community. Many seeds have been planted, and the next few years should begin to yield harvests — for example, in the areas of neurodegenerative diseases research, membrane biology, immunology/transplantation, and basic mechanisms related to oncology.

The Faculty must continue to hold research as a high priority, striving not only for new knowledge and innovations which will advance the health sciences, but also for the maintenance and further development of an intellectually challenging milieu in which the best teaching and research occurs. Capture of more research funding to support these activities is essential. As well, continued and perhaps increased collaboration across disciplines will foster an environment conducive for discovery — not only between our campus and hospital-based researchers, but also amongst our clinical, basic and community oriented faculty. I believe that our greatest opportunities will be realized through such collaboration and sharing of ideas.

3.4 SPECIFIC PRIORITY ITEMS

The following is only a partial list of specific priority items which the Faculty may well wish to continue to address; these are not listed in any ranked order.

1. Adoption of the revised Faculty mission as developed by the DSPC.
2. Continued process of strategic planning, with broad involvement across the Faculty.
3. Support for interdepartmental, sector-wide complement planning and recruitment.
4. Closer linkage of strategic planning, program development, recruitment and budgeting.

5. Establishment of mechanisms to deal with reallocation of resources in situations where contraction of programs and activities may be necessary.
6. Ratification of the full-time clinical appointments policy by the Governing Council.
7. Investigation of the feasibility of establishing a clinical teachers assocation, either within or outside UTFA.
8. Strengthening the Faculty's commitment to Community Health, perhaps with a different organization following the report of the Task Force established this year to review the Division.
9. Establishment of a Department of Clinical Neurological Sciences.
10. Development of a Department of Radiation Oncology, when this is feasible.
11. Establishment of a Faculty-organization for academic development of Geriatrics and Gerontology, pending the report of the current Ways and Means Committee.
12. Development of the Faculty's bioethics program in collaboration with the teaching hospitals and within a University interdisciplinary structure.
13. Continued support of new high-profile research initiatives.
14. Development of a program in Clinical Epidemiology.
15. Revisions to the undergraduate medical admissions policies, pending discussion of the report of the recent Task Force review.
16. Ongoing efforts to facilitate joint University-hospital planning and to establish procedures to enhance collaboration.

There are many other initiatives, too numerous to list, which are high priorities for individual departments and groups of faculty members and which should, of course, continue to be pursued. Those items which I have listed are presented here to emphasize their Faculty-wide importance in our pursuit of excellence.

4. CONCLUSIONS

The University of Toronto's Faculty of Medicine has emerged as not only the largest but also the leading medical school in Canada, despite a decade of University base budget cuts. Our undergraduate education programs have been reviewed and are receiving high priority; our large and prestigious postgraduate medical programs are maintaining high standards; our graduate programs, in the Life Sciences Division of the School of Graduate Studies, are well regarded; and our efforts in continuing education of practicing health care professionals have been redoubled. We have made a serious effort to "humanize" the student experience in the face of a large, at times impersonal, environment in an urban metropolis in which campus life can easily be submerged.

There has been remarkable growth and maturing of our research enterprise, both campus-based and hospital-based. In a very competitive environment, we have captured an increasing share of competitively awarded public and private funds, which is one measure of success in this domain.

It has been possible to establish a new Department of Immunology and to consolidate our Microbiology departments. Impressive strides have been made in neuroscience development, and the foundation has been laid for new departments of Clinical Neurological Sciences and Radiation Oncology, as well as major Faculty initiatives in bioethics, clinical epidemiology, and geriatrics and gerontology, to name only a few.

All this has been possible because of a highly trained, competent cadre of committed teachers, researchers and administrators, unrivaled clinical and research facilities and a quest for excellence that extends across the teaching hospitals and the campus.

There are, of course, serious problems that demand continuing attention. The morale of many of our staff is being sapped by funding restrictions, changes in administrative arrangements (especially in some of the hospitals), paucity of rewards for the services they provide, and subtle societal redefinitions of professional roles and status.

The Dean's Office and department chairmen must redouble efforts to define Faculty goals and specific objectives more clearly, and support these by an integrated planning, budgeting and space allocation process.

Painful and courageous review of the Faculty's commitments is necessary, including the commitment of programs and resources to teaching hospitals. Capitalizing on the advantages of hospital mergers will be a challenge to the Faculty as much as to the boards and administrations of the hospitals. Serious ongoing consideration must be given to a reduction in the size of our undergraduate medical classes.

These and many other tasks stand before us as we continue, under Dr.John Dirks' leadership, to fulfill the potential of this great medical school.

On a personal note, the past seven years have been for me at least as gratifying as they have been demanding. As Dean, I have had few free moments but truly none that were boring. The satisfaction of seeing continuing progress on the part of this Faculty and of knowing that I have been able to contribute to this has been immense. It has been a privilege to have served as Dean of this justifiably prestigious medical school.

SUPPLEMENTARY TABLE 1

RESEARCH FUNDING BY DEPARTMENT AND ADMINISTRATIVE SITE

1985 - 1986 (APRIL - MARCH)

DEPARTMENT	U of T Admin. $	Hosp. Admin. $	Total $
BASIC SCIENCES			
Anatomy	1,877,102	—	1,877,102
B.B.D.M.R.	2,617,946	—	2,617,946
Biochemistry	2,084,259	968,272	3,052,531
Inst. Biomed. Eng.	602,049	134,190	736,239
Immunology	1,344,195	440,539	1,784,734
Medical Biophysics	726,183	5,196,499	5,922,682
Medical Genetics	2,941,830	1,485,903	4,427,733
Microbiology	1,861,264	469,020	2,330,284
Nutritional Sciences	1,016,105	—	1,016,105
Pharmacology	1,521,117	368,909	1,890,026
Physiology	2,316,537	89,300	2,405,837
Playfair Unit	329,695	61,247	390,942
SUB TOTAL	19,238,282	9,213,879	28,452,161
COMMUNITY HEALTH			
Behavioural Science	588,825	170,376	759,201
Health Administration	661,379	—	661,379
Occup. & Env. Health	12,784	127,898	140,682
Prev. Med. & Biostat.	2,176,374	299,747	2,476,121
SUB TOTAL	3,439,362	598,021	4,037,383
CLINICAL SCIENCES			
Anaesthesia	185,893	137,625	323,518
Clin. Biochemistry	725,831	1,304,443	2,030,274
Family & Comm. Med.	176,031	415,772	591,803
Inst. of Med. Sci.	85,206	—	85,206
Medicine	7,840,854	5,179,968	13,020,822
Obstet. & Gynae.	326,263	143,620	469,883
Ophthalmology	579,309	106,503	685,812
Otolarynogology	197,714	448,224	645,938
Paediatrics	51,332	7,317,403	7,368,735
Pathology	2,184,365	1,366,723	3,551,088
Psychiatry	607,827	1,862,962	2,470,789
Radiology	112,240	73,400	185,640
Rehab. Medicine	108,362	136,074	244,436
Surgery	2,410,864	2,960,012	5,370,876
SUB TOTAL	15,592,091	21,452,729	37,044,820
OTHER FIELDS			
Hist. of Medicine	15,048	—	15,048
D.S.M.E.	28,202	—	28,202
SUB TOTAL	43,610	—	43,610
GRAND TOTAL	**38,313,345**	**31,264,629**	**69,577,974**

SUPPLEMENTARY TABLE 2

FACULTY OF MEDICINE UNIVERSITY ADMINISTERED RESEARCH FUNDING BY DEPARTMENT 1980 - 1986

DEPARTMENT	1980-1981 $	1981-1982 $	1982-1983 $	1983-1984 $	1984-1985 $	1985-1986 $
BASIC SCIENCES						
Anatomy	689,294	1,060,360	1,129,168	1,486,487	1,757,306	1,877,102
B.B.D.M.R.	2,061,345	2,036,828	1,920,402	2,521,989	3,243,995	2,617,946
Biochemistry	1,878,507	2,237,693	2,353,971	2,156,681	2,586,862	2,084,259
Inst. Biomed. Eng.	557,404	716,947	417,167	694,426	733,213	602,049
Immunology	—	2,550	—	—	1,123,049	1,344,195
Medical Biophysics	1,057,414	1,361,337	115,177	539,162	433,873	726,183
Medical Genetics	1,305,088	2,289,382	2,155,779	2,392,924	2,080,506	2,941,830
Microbiology	1,102,637	887,086	983,006	881,590	1,488,769	1,861,264
Nutritional Sciences	464,046	593,659	895,906	942,853	982,834	1,016,105
Pharmacology	1,535,769	1,784,282	1,485,551	1,596,444	1,376,586	1,521,117
Physiology	1,451,032	1,578,279	1,434,044	1,697,413	2,304,320	2,316,537
Playfair Unit	—	—	—	810,943	461,919	329,695
SUB TOTAL	12,102,536	14,548,398	12,890,171	15,720,912	18,573,232	19,238,282
COMMUNITY HEALTH						
Behavioural Science	—	—	105,347	275,928	454,216	588,825
Health Administration	377,744	230,516	393,471	569,707	487,362	661,379
Occup. & Env. Health	—	—	—	11,400	33,680	12,784
Prev. Med. & Biostat.	680,619	449,973	901,595	1,772,473	2,316,817	2,176,374
SUB TOTAL	1,058,363	680,489	1,400,413	2,629,508	3,292,075	3,439,362
CLINICAL SCIENCES						
Anaesthesia	175,450	201,581	187,989	210,993	217,948	185,893
Clin. Biochemistry	330,283	473,412	571,931	457,913	733,127	725,831
Family & Comm. Med.	264,640	401,173	230,252	49,331	206,137	176,031
Inst. of Med. Sci.	60,425	62,420	—	118,120	29,000	85,206
Medicine	5,688,637	6,480,178	4,792,072	5,880,161	8,685,293	7,840,854
Obstet. & Gynae.	127,124	311,197	260,418	233,283	286,007	326,263
Ophthalmology	439,638	335,391	331,913	690,103	831,833	579,309
Otolaryngology	571,582	598,253	456,381	479,086	614,209	197,714
Paediatrics	—	1,000	—	1,000	60,520	51,332
Pathology	1,419,902	1,426,162	1,669,810	1,929,492	2,496,530	2,184,365
Psychiatry	241,817	297,060	382,512	386,526	394,283	607,827
Radiology	465,518	471,694	479,506	289,105	361,387	112,240
Rehab. Medicine	116,012	117,345	121,983	216,207	52,568	108,362
Surgery	2,015,555	1,843,401	1,663,417	2,261,160	3,072,565	2,410,864
SUB TOTAL	11,916,583	13,020,267	11,148,184	13,202,480	18,041,407	15,592,091
OTHER FIELDS						
Hist. of Medicine	—	—	—	—	12,040	15,408
D.S.M.E.	—	—	—	—	—	28,202
Miscellaneous	1,541,109	654,127	693,892	320,152	—	—
SUB TOTAL	1,541,209	654,127	693,892	320,152	12,040	43,610
GRAND TOTALS	**26,618,691**	**28,903,281**	**26,132,660**	**31,873,052**	**39,918,754**	**38,313,345**

SUPPLEMENTARY TABLE 3

CURRENT FACULTY APPOINTMENTS

(AS OF JUNE, 1987)

	Prof.	Assoc. Prof.	Asst. Prof.	Lect.	Inst.	Res. Assoc.	Tutor/ Sr. Tutor	Prof. Emer.	Visit. Prof.	Adj. Prof.	Total
Anatomy	9	13	6	1		1	2	3			35
Anaesthesia	7	27	87	67				1	1		190
Art as App. to Med.	1	4	7	7				1			20
B.B.D.M.R.	10	3	1	1		2					17
Behavioural Science	7	10	8	2			1	1		1	30
Biochemistry	25	6	5			9	3				48
Clinical Biochemistry	10	11	28	5		2		4			60
Family and Comm. Med.	10	17	70	92	99			2			290
Health Administration	6	14	12	17		1		4	1		55
Immunology	5	5	4							1	15
Medical Biophysics	16	8	17	3				1			45
Medical Genetics	9	3	10			3		2			27
Medicine	60	141	224	153	7	13		6	4		608
Microbiology	13	18	24	2			1	8			66
Nutritional Sciences	3	7	9								19
Obstetrics & Gynae.	10	23	52	48	1			3			137
Occ. & Env. Health Unit	4	4	12	6				1		2	29
Ophthalmology	9	17	28	18		3		6	1	1	83
Otolaryngology	9	14	25		19			2	2		71
Paediatrics	28	42	112	34				12	6	1	235
Pathology	15	41	38	25		2		9	6	1	137
Pharmacology	15	8	11	2		1	1	3		4	45
Physiology	15	9	9	1		4	2	7			47
Prev. Med. & Biostat.	15	12	21	28		5		2	3	1	87
Psychiatry	24	84	171	186	1			3	6		475
Radiology	24	19	52	60				6	1		162
Rehab. & Phy. Med.	7	10	28	92	12	1	1	5			156
Surgery	42	52	97	56	30	8		15	4	2	306
TOTAL	**408**	**622**	**1,168**	**906**	**169**	**55**	**11**	**107**	**35**	**14**	**3,495**

APPENDIX: CHAIRMEN AND DIRECTORS 1980 - 1987

Departments

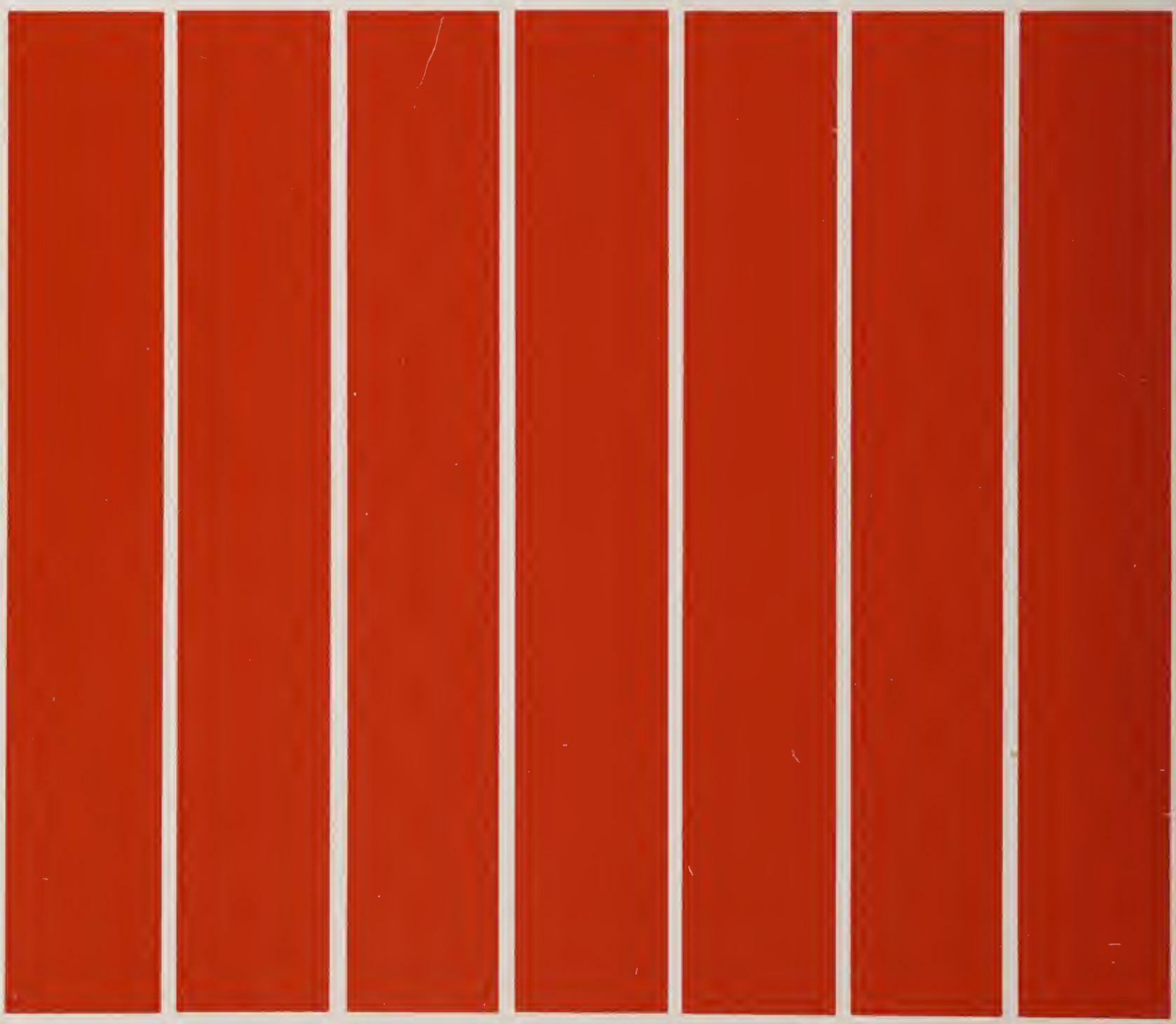
Anaesthesia:	A.A. Scott (1977 - 1987)
Anatomy:	K.L. Moore (1976 - 1985)
	M.J. Hollenberg (1985 -)
Art as Applied to Medicine:	N. Joy (1973 - 1985)
	A. Wright (Acting, 1985 - 1986)
	L. Wilson - Pauwels (Acting, 1986 -)
Banting and Best Department of Medical Research:	D.H. MacLennan (1980 -)
Behavioural Science:	S. Griew (1977 - 1980)
	M.J. Kelner (Acting, 1981 - 1983)
	Q. Rae-Grant (1984 - 1987)
	R. Badgley (Acting, 1987 -)
Biochemistry:	K.J. Dorrington (1977 - 1982)
	M.A. Packham (Acting, 1982 - 1983)
	H. Schachter (1984 -)
Clinical Biochemistry:	D.M. Goldberg (1977 - 1987)
Family & Community Medicine:	F.B. Fallis (1977 - 1982)
	W.H. Palmer (1982 -)
Health Administration:	E. Vayda (1976 - 1981)
	J.E.F. Hastings (Acting, 1981 - 1982)
	T. Goldberg (1983 -)
Immunology:	R.G. Miller (1984 -)
Medical Biophysics:	G.F. Whitmore (1976 - 1981)
	R.A. Phillips (1981 - 1987)
	P. Ottensmeyer (1987 -)
Medical Genetics:	P.D. Sadowski (Acting, 1980 - 1981)
	J.D. Friesen (1981 -)
Medical Microbiology:	L.P. Spence (Acting, 1980 - 1982)
Microbiology & Parasitology:	R. Sheinin (1976 - 1981)
	L.W. MacPherson (Acting, 1981 - 1982)
Microbiology:	L.P. Spence (1983 -)
Medicine:	C.H. Hollenberg (1970 - 1981)
	G.N. Burrow (1981 -)
Nutritional Sciences:	G.H. Beaton (1975 - 1981)
	G.H. Anderson (1981 -)
Obstetrics & Gynaecology:	J.L. Harkins (1970 - 1981)
	W.J. Hannah (1982 -)
Ophthalmology:	C. McCulloch (1974 - 1982)
	C.B. Mortimer (1982 -)
Otolaryngology:	D.P. Bryce (1974 - 1982)
	P.W. Alberti (1982 -)
Paediatrics:	D.H. Carver (1976 - 1986)
	R.H.A. Haslam (1986 -)
Pathology:	E. Farber (1974 - 1985)
	M.A. Silver (1985 -)
Pharmacology:	P. Seeman (1977 - 1987)
Physiology:	D.W. Clarke (Acting, 1980 - 1981)
	H.L. Atwood (1981 -)
Preventive Medicine & Biostatistics:	M.J. Ashley (1980 -)
Psychiatry:	V.M. Rakoff (1980 -)
Radiology:	E.L. Lansdown (1974 - 1984)
	G. Wortzman (Acting, 1984 - 1985)
	D.G. Potts (1985 -)
Rehabilitation Medicine:	J.S. Crawford (1972 - 1983)
	J.T. Marotta (Acting, 1983 - 1985)
	M. Milner (1985 -)
Surgery:	D.R. Wilson (1972 - 1982)
	B. Langer (1982 -)

Academic Units

Banting & Best Diabetes Centre:	E.A. Sellers (1979 - 1981)
	C.H. Hollenberg (1981 -)
Canadian Liver Foundation Epidemiology Unit:	J.G.D. Rankin (1981 -)
Hannah Chair of the History of Medicine:	P.M.H. Mazumdar (1976 - 1987)
Health Care Research Unit:	J.I. Williams (1977 - 1984)
	C. Voelker (1985 -)
Institute of Biomedical Engineering:	R.S. Cobbold (1974 - 1983)
	W. Zingg (1983 -)
Institute of Immunology:	A. Zimmerman (1980 - 1981)
	B.J. Underdown (1981 - 1983)
	R.G. Miller (1983 - 1984)
Institute of Medical Science:	D.A.K. Roncari (1980 - 1983)
	A. Angel (1983 -)
National Cancer Institute Epidemiology Unit:	A.B. Miller (1976 - 1986)
	G. Howe (1987 -)
Occupational & Environmental Health Unit:	G.J. Stopps (Acting, 1980 - 1981)
	J.R. Nethercott (1981 -)
Ontario Cancer Treatment and Research Foundation Epidemiology Unit:	E.A. Clarke (1977 -)
Playfair Neuroscience Unit:	W.G. Tatton (1978 -)

Service Divisions

Central Services:	K. Bowler (1971 - 1983)
	J.D. Kraemer (Acting, 1983 - 1985)
	D. Gulliver (1985 -)
Instructional Media Services:	J.D. Kraemer (Acting, 1980 - 1981)
	L. Currier (1981 -)
Laboratory Animal Sciences:	J. Kenyon (1980 -)
Medical Computing:	J. Potvin (1974 -)
Studies in Medical Education:	A.I. Rothman (1970 - 1984)
	E.M. Sellers (1984 -)
Teaching Laboratories:	A. Sirek (1976 - 1986)
	L. Spero (1986 -)
Technical Services:	M.R. Paull (1986 -)



Design: Instructional Media Services University of Toronto